4/1/87 U7095-1

Vol. 10, No. 2
Winter 1986-1987

KANSAS BUSINESS REVIEW

In this issue:

Venture Capital Financing in Kansas
Jack Gaumnitz

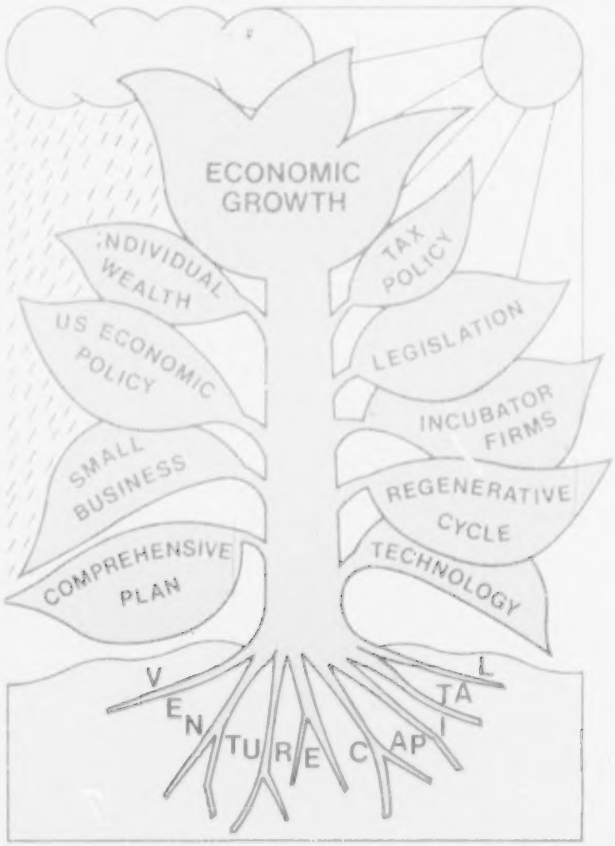
Spending, Deficits, and Special Interests
James C. Miller

Economic Development Challenges for Kansas
Belden Daniels

Management Trends Focus on Quality
Lawrence A. Sherr
Carolyn Coleman

Research Note

Economic Conditions
Economic Indicators



The Institute for Public Policy and Business Research, The University of Kansas

KANSAS BUSINESS REVIEW

Vol. 10, No. 2
Winter 1986-1987

In This Issue

	Page
Venture Capital Financing in Kansas Jack Gaumnitz	3
Spending, Deficits, and Special Interests James C. Miller	8
Economic Development Challenges for Kansas Belden Daniels	12
Management Trends Focus on Quality Lawrence A. Sherr Carolyn Coleman	16
Research Note The Laffer Curve	18
Economic Conditions The National Review	20
The Kansas Economy	23
Economic Indicators	27

Advisory Board of the Institute for Public Policy and Business Research—Mr. Edward Bruske, President, Kansas Chamber of Commerce and Industry; Acting Executive Vice Chancellor Delbert M. Shankel; Vice Chancellor Frances Horowitz; Professor Anthony Redwood, Director, Institute for Public Policy and Business Research; Dean John O. Tollefson, School of Business; Professor Joseph Sicilian, Chairman, Department of Economics.

Editorial Board—Professor Anthony Redwood, Executive Director; Professor Charles Krider, Director of Business Research; Professor Mohamed El Hodiri, Director of Economic Research; Carolyn Coleman, Editor; Gary R. Albrecht, Research Economist.

Kansas Business Review (KBR), ISSN 0164-8632, is published four times a year. *KBR* is published by the Institute for Public Policy and Business Research, 607 Blake Hall, The University of Kansas, Lawrence, Kansas 66045. The journal is designed by Laura Kriegstrom Poracsky of IPPBR.

Manuscripts for publication in the *Kansas Business Review* are solicited from readers and should be sent to the editors for consideration.

Opinions expressed in the articles are those of the author(s) and do not necessarily reflect those of the University of Kansas.

The purpose of the *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the field of economics and business that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes original manuscripts, studies, and research notes from academicians and other persons in any area of economics, business, and business administration. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double-spaced, and submitted in triplicate. In general, length should not exceed three thousand words. Authors are reminded of the combined scholarly/practitioner orientation of the *Kansas Business Review*, which necessitates the contents being in a form readable by that audience. Accordingly, complex statistical material—when necessary for inclusion—should be included in appendix form.

Submit manuscripts to: Editor, *Kansas Business Review*, The Institute for Public Policy and Business Research, 607 Blake Hall, The University of Kansas, Lawrence, Kansas 66045.

Annual Midwest Public Policy Symposium

"Community Impacts of Deregulation"

University of Kansas

April 22-23, 1987

Deregulation of electric utilities, banking, telecommunications, and transportation (airlines, buses, and railroads) will be examined in relation to impacts on communities. While deregulation has brought many benefits at the national level and may ultimately do so at the state and local levels, it has tended in the meantime to exacerbate the problems of many communities in the Midwest at a time when survival is the very issue facing them. The objective of this symposium is to

- Develop a focus on the effects of ongoing and anticipated federal deregulation on midwest economies;
- Determine to what extent growth or decline of local business can be attributed to changes in the regulatory environment;
- Discuss how local government has been affected by deregulation; and
- Clarify how communities can evaluate changes in the quality of goods and services provided by the deregulated industries.

Research papers will be presented by scholars from the Universities of Wisconsin, Pittsburg, Indiana, Minnesota, and Kansas State and the University of Kansas followed with responses from academicians and practitioners familiar with the effects of deregulation in the emphasized areas.

Registration will be limited to 70 participants. For further information contact:

Loretta Carraher
Conference Coordinator
Institute for Public Policy
and Business Research
University of Kansas
607 Blake Hall
Lawrence, KS 66045
(913) 864-3123

Total Quality Commitment: Enhancing Your Company's Competitive Position

University of Kansas

April 6-10, 1987

The purpose of this seminar is to convey to managers what can be done to improve quality and increase productivity in their companies. The focus will be on both manufacturing and service industries. The central issues to be covered are the role of quality, the importance of teamwork, and the need for a systematic approach for the improvement of quality in order to better position the firm in the marketplace. The following topics will be discussed:

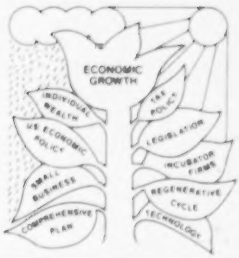
- The Quality-Productivity Link
- The Workplace as a System
- Random Variation and Control Charts
- Quality and the Consumer
- Impediments to Change
- How Do I Start?

By the end of the seminar, participants should have a better understanding of the manager's responsibility for improving quality and increasing productivity. They will also learn how to apply the concepts in their own companies to achieve quality-productivity enhancements. The seminar will be led by Steve Hillmer and Dennis Karney, with some sessions conducted by Larry Sherr. These professors from the K.U. School of Business have extensive experience in teaching, research, and consulting in the areas of decision support, which include statistical analysis, model building, and micro-computer applications designed to help managers improve their operations.

Enrollment will be limited to a maximum of 25 participants. For further information and a brochure, contact:

Gordon Fitch, Director
Management Development Programs
School of Business
201 Summerfield Hall
University of Kansas
(913) 864-3795

Venture Capital Financing in Kansas



Jack E. Gaumnitz

Jack Gaumnitz is currently a professor in the School of Business, University of Kansas. He received his B.S. and M.B.A. from the University of Wisconsin and his Ph.D. from Stanford. He has co-authored books on financial institutions, capital markets, and social security and has published several articles in the general areas of portfolio management, securities investment, and real estate. In addition, he is the president of an investment group.

Introduction

Kansas has not generally been associated with venture capital, entrepreneurial activity, or other contemporary topics that are presumed to represent the future of our nationai economy. Apparently there has been good reason for the inconspicuous treatment of Kansas in economic development literature when it comes to the subject of venture capital.

The purpose of this study has been to further explore the extent and significance of the venture capital industry with particular attention to Kansas. A major concern has been the scarcity of venture capital for Kansas.[1] If this concern is justified, what more can be done to encourage venture capital investment and thereby enhance economic progress in Kansas?

As indicated in the tables accompanying this article, Kansas tends to be one of the least successful states in attracting venture capital funds and in attracting the type of firms that venture capitalists are seeking. Up until 1982 Kansas did not fare poorly relative to other midwestern states in terms of small business formation and employment growth. In sharp contrast, the last four years have been particularly burdensome, as the state has suffered significant relative economic losses.

Research has shown that venture capital is the single most often cited reason for high entrepreneurial activity.[2] The Kansas Legislature's 1986 action was a necessary and substantial step forward in encouraging economic growth in Kansas by addressing the venture capital problem.

Attracting venture capital to Kansas will remain a difficult task, however, until the state substantially changes its economic base. In any event, an improvement in venture capital opportunities is likely to be a very long process that will require continued emphasis and commitment for many years. There is no single factor that ensures entrepreneurial activity on a large scale. Experience in other states indicates a need for a high degree of cooperation among the state, entrepreneurs, and financial institutions in order to make an active venture capital market.

Business Climate Rankings and Venture Capital

The number of new incorporations and the number of bankruptcies are two indicators of the business climate of a state. Table 1 shows a state-by-state comparison of these measures. Under the "new incorporations" column a low rank shows poor performance, while a high ranking under the "bankruptcies" column shows poor performance.

The data reveal that Kansas fared poorly between 1980 and 1985 relative to others, ranking 41st in new incorporations and 25th in bankruptcies. Many midwestern states ranked near Kansas. Thus, Kansas was not alone in the boat of sinking economies: we had plenty of company in the region.

It is interesting to note that three states, Arizona, New Hampshire, and South Carolina, had some of the best rankings over the 1980-1985 period. New Hampshire ranked first in new incorporations followed by South Carolina. Arizona ranked sixth. The bankruptcy record of all three states was not quite as good, but they ranked above the average of all other states. These states have attained economic growth and enjoyed robust entrepreneurial activity through substantially different strategies.

New Hampshire has grown by urging strong cooperation between small business and state agencies. State leaders have adopted a "can do" attitude while shunning big state giveaways like tax abatement and industrial revenue bonds. They stress a quick response and solution to any nagging small business problems. Their approach is to try to fix a problem immediately rather than run through interminable bureaucratic channels.

South Carolina, on the other hand, has stressed a very active government role in the venture capital process. The state, being basically conservative by nature of its people and financial institutions, has seen "jawboning" become a part of the state's weapons in pushing economic growth. Often the state will urge financial institutions and other private-sector interests to get behind a particular piece of economic legislation, however difficult it may be for them to jettison their traditional approaches. Foremost among

Apparently there has been good reason for the inconspicuous treatment of Kansas in economic development literature when it comes to the subject of venture capital.

Table 1
Business Climate: State-by-State Glance

State	New Incorporations 1985	Percent Change 1980-85	Rank by Percent Change	Bankruptcies 1985	Percent Change 1980-85	Rank by Percent Change
Alabama	6,139	57.0	5	949	−11.0	45
Alaska	2,132	26.1	27	277	0.4	42
Arizona	12,922	54.9	6	1,441	72.6	20
Arkansas	5,272	34.4	20	604	122.9	11
California	61,160	6.6	37	9,967	69.1	22
Colorado	14,171	38.5	17	2,347	115.7	12
Connecticut	11,208	49.2	9	347	−20.1	48
Delaware	26,606	27.9	25	47	−11.3	46
Dist. of Columbia	2,199	67.1	3	97	155.3	5
Florida	71,649	38.0	18	2,151	105.1	14
Georgia	17,286	40.0	13	1,830	62.8	26
Hawaii	3,000	−8.3	44	266	18.8	37
Idaho	1,636	−9.8	45	704	51.7	28
Illinois	34,691	40.0	14	4,009	29.3	34
Indiana	9,916	23.8	28	1,421	68.4	23
Iowa	4,097	−20.0	49	2,272	150.8	6
Kansas	**4,752**	**−1.6**	**41**	**1,234**	**65.9**	**25**
Kentucky	7,886	50.9	8	997	81.9	19
Louisiana	11,404	0.8	39	1,540	123.5	9
Maine	2,595	52.8	7	184	−36.8	51
Maryland	14,239	66.6	4	486	12.8	38
Massachusetts	15,801	39.9	15	441	−7.6	43
Michigan	21,864	31.2	24	1,547	10.6	39
Minnesota	9,209	31.6	23	1,738	100.5	15
Mississippi	3,160	−34.9	51	384	109.8	13
Missouri	10,176	18.2	30	1,843	61.1	27
Montana	1,408	−5.3	43	356	83.5	18
Nebraska	2,617	−9.4	46	628	28.7	35
Nevada	8,685	44.8	11	684	90.5	17
New Hampshire	3,542	158.0	1	140	−10.8	44
New Jersey	30,458	41.8	12	2,576	−19.5	47
New Mexico	2,843	16.0	32	373	123.4	10
New York	72,083	27.6	26	1,013	2.3	41
North Carolina	11,796	34.7	19	1,005	32.8	33
North Dakota	866	−14.3	48	357	93.0	16
Ohio	17,173	8.2	35	2,293	70.4	21
Oklahoma	6,399	17.3	31	2,000	233.9	3
Oregon	7,161	8.2	36	2,046	159.0	4
Pennsylvania	17,748	19.3	29	1,354	5.5	40
Rhode Island	3,054	33.8	21	131	−29.2	49
South Carolina	7,072	72.7	2	299	33.5	32
South Dakota	944	3.7	38	611	129.7	8
Tennessee	8,723	33.3	22	1,474	36.6	30
Texas	41,370	11.0	34	6,359	251.7	2
Utah	3,717	−1.0	40	1,223	67.8	24
Vermont	1,743	48.8	10	69	−32.4	50
Virginia	15,017	38.5	16	1,905	47.6	29
Washington	9,379	12.1	33	1,698	26.3	36
West Virginia	2,465	−11.6	47	413	35.9	31
Wisconsin	6,440	−1.7	42	2,021	136.7	7
Wyoming	1,031	−31.6	50	493	328.7	1
U.S. Total	668,904	25.4		70,644	63.3	

Source: Office of Advocacy, Small Business Administration, 1986.

South Carolina's venture capital innovations has been a linking of private businesses and state government to form regional incubators to foster the growth of small businesses around the state.

Arizona has taken a more balanced approach to its venture capital problem. State cooperation, tax abatement, and revenue bonds all have played a part in attracting venture capital firms. While its public policy has undoubtedly helped, most financial experts have recognized that Arizona's sun-belt location has been important to venture capitalists.

The magazine *Inc.*'s ranking of states, based on such factors as numbers of new jobs, new companies, and fast-growth companies, tends to support earlier conclusions based on new incorporations and bankruptcies (Table 2). The data cover 1982 through 1986. Kansas was 36th among all states in this ranking.

Table 3 lists the number of venture capital firms by state, as well as the number of investment banking firms in a particular state that focus on the underwriting of small company issues. Again we see the typical pattern of little or no activity in the Midwest. Kansas has only one firm involved in venture capital and no underwriters of small companies. This information is important because the availability of capital and a procedure whereby venture capital suppliers can "cash out" through the eventual public offering of a company's stock is vital to the formation of new firms. Table 3 also shows that while venture capitalists can deal on a national basis, they frequently prefer a regional orientation. The conclusion is apparent: If a state wants a high level of entrepreneurial activity, it needs an abundance of venture capital suppliers and, in addition, a group of underwriters who will eventually sell the stock of small companies to the public, thus replenishing the venture capitalists' investment funds.

Venture Capital Cycles

At least two venture capital cycles can be identified (1) the maturation cycle of the typical business firm, and (2) the cash-flow cycle of the venture capitalist.

Under the maturation cycle the firm typically starts out as a small "mom-and-pop" operation, expands, becomes public if it is successful, matures, and eventually declines or is absorbed by other

Experience in other states indicates a need for a high degree of cooperation among the state, entrepreneurs, and financial institutions in order to make an active venture capital market.

firms. The current economic conditions have a significant influence on the initial success of the firm, the speed of its expansion, and the need for funds from venture capitalists and others.

The cash-flow cycle for the venture capitalist begins with an initial investment, perhaps active involvement in the management of the new company, and willingness to supply expansion funds if needed. Eventually the venture capitalist plans to publicly issue the company's stock and repeat the cycle again with another new company. The U.S. experience suggests the importance of establishing a regenerative venture capital cycle where successful ventures generate financial and human capital for new ventures. Tax policy and an active market for new stock issues play a crucial role in this cycle by permitting entrepreneurs and investors to 'cash out' and thereby recycle their capital.

Either of these cycles is greatly influenced by economic conditions, government economic policy, and the latest Wall Street fads. For example, the public marketplace varies considerably over time in its interest in financing small business. The late 1970s saw more than $12 billion invested in the stock of small companies, while in 1984 the funding was cut by more than 50 percent. As a result, many venture capital firms had to supply additional funds to growing companies or else sharply curtail financing plans until they could liquidate some of the investments. In 1985 and 1986 the market shifted, and investors again chose to finance small companies.

Table 2
Rating the States 1986: New Jobs, New Companies, and the Climate for Growth

Rank	State	Total Score	Rank	State	Total Score
1	Arizona	29.52	26	Maine	13.96
2	Alaska	24.12	27	Washington	13.39
3	Texas	22.94	28	Alabama	13.29
4	New Hampshire	22.44	29	Ohio	13.18
5	Georgia	22.06	30	Minnesota	12.79
6	Maryland	21.21	31	Missouri	12.71
7	Florida	21.05	32	Pennsylvania	12.19
8	Delaware	20.66	33	Arkansas	12.13
9	Massachusetts	20.14	34	Hawaii	12.13
10	Virginia	20.10	35	Louisiana	12.09
11	California	19.87	**36**	**Kansas**	**12.02**
12	Utah	19.10	37	Kentucky	11.99
13	Colorado	18.81	38	Illinois	11.39
14	South Carolina	17.48	39	Wisconsin	11.38
15	North Carolina	17.23	40	Oregon	11.14
16	Tennessee	17.00	41	Mississippi	10.27
17	New Mexico	16.79	42	Idaho	10.18
18	New Jersey	16.73	43	Oklahoma	9.84
19	Connecticut	16.38	44	Nebraska	9.36
20	Nevada	16.33	45	South Dakota	7.92
21	Vermont	15.82	46	West Virginia	7.84
22	Rhode Island	15.49	47	Montana	6.81
23	New York	14.90	48	Iowa	6.57
24	Michigan	14.25	49	North Dakota	5.93
25	Indiana	14.19	50	Wyoming	5.91

Source: *Inc.*, October 1986, p. 58.

An Environment Conducive to Venture Capital Formation

Research has shown that the presence of incubators and a volatile social and technical climate are positively related to an active venture capital economy. Incubator firms are designed to spawn other firms. Most incubators reduce overhead cost by providing inexpensive office space and staff for new businesses. They tend to create a snowballing effect as employees of one technical company often start new firms in the same technical field.[3] Several studies have shown that the incubator effect is a crucial factor in entrepreneurial activity.[4] Private sector firms, where the entrepreneur is in contact with both potential markets and the state of the technology, constitute the most favorable incubator environments.

Social revolutions and technological innovations have historically tended to encourage formations of new firms. Diverse occupations and types of industry are important predictors of high rates of technical entrepreneurship. The term "social revolution" generally applies to an influx of people, often of foreign cultures. Rapid technological change often results in opportunities for those with the technological expertise or special abilities to effectively manage technological change.

Government activities, the amount of money available for investment, and the

If a state wants a high level of entrepreneurial activity, it needs an abundance of venture capital suppliers.

Table 3
Venture Capital Firms and Underwriters

State	Number of Companies[1] Venture Capital	Small Company Underwriters	Geographical Preference	Type of Financing Available[2]
Alabama	2	1	Southeast	Range
Alaska	0	0	—	—
Arizona	6	2	SW/National	Range
Arkansas	1	1	National	Second stage
California	178	14	West Coast	Range
Colorado	23	5	Rocky Mtns/National	Range
Connecticut	36	2	NE/National	Start-up/second stage
Delaware	1	0	National	Second stage
Florida	15	6	SE/National	First/second stage
Georgia	10	2	Southeast	First/second stage
Hawaii	1	0	Hawaii/West Coast	Second stage
Idaho	—	0	—	—
Illinois	36	4	MW/National	First stage
Indiana	8	0	MW/Indiana	Second stage
Iowa	5	1	National	First stage
Kansas	1	0	National	First stage
Kentucky	2	1	MW/Kentucky	Second stage
Louisiana	4	1	SE/National	First stage
Maine	1	0	Maine only	Start-up
Maryland	13	2	East Coast/National	Start-up
Massachusetts	83	2	East Coast/National	Range
Michigan	11	4	MW/National	Start-up
Minnesota	20	8	MW/National	Start-up
Mississippi	1	0	Southeast	Second stage
Missouri	9	4	National/MW	First stage
Montana	2	0	Montana	Range
Nebraska	0	1	—	—
Nevada	0	0	—	—
New Hampshire	5	0	Northeast	First stage
New Jersey	21	5	NE/National	Start-up
New Mexico	5	1	Southwest	Range
New York	126	68	National	Start-up
North Carolina	10	2	SE/National	Range
North Dakota	0	0	—	—
Ohio	16	3	MW/National	Start-up
Oklahoma	6	2	MW/Southwest	First stage
Oregon	8	2	NW/West Coast	Start-up
Pennsylvania	33	5	National/NE	Range
Rhode Island	6	0	National/NE	Range
South Carolina	3	0	Southeast	First stage
South Dakota	0	0	—	—
Tennessee	7	1	SE/Tennessee	First stage
Texas	62	8	SW/Texas/National	Range
Utah	1	1	Rocky Mountains	First stage
Vermont	0	0	—	—
Virginia	8	3	Southeast	Range
Washington	14	1	NW/W. Coast/National	Start-up
West Virginia	0	0	—	—
Wisconsin	11	3	MW/National	Second stage
Wyoming	1	0	Wyoming only	Start-up
District of Columbia	13	0	East Coast/National	Start-up

[1]Several venture capital companies have offices in other states.
[2]"Range" means all types are available.

Source: *Pratt's Guide to Venture Capital Sources*, 10th ed., 1986.

States are beginning to look at their economic environments as if they were asset portfolios. Government can assist in areas that individual markets can't handle.

availability of technological expertise are important influences with moderate impact on venture capital formation.

Tax policy, including tax abatement and low taxes on business assets or income, can be a favorable influence on capital formation. Equally important, even in the absence of tax incentives, would be a state economic environment that is favorable toward business. This is generally characterized as a user-friendly atmosphere where the emphasis is on service and getting the job done rather than on tax incentives.

Financial resources depend on the attitude and size of the financial institutions in a state. Historically speaking, banks have been poor sources for venture capital because of their preference for established firms with solid collateral. Hence a change in attitude, organization, and regulation would be necessary to get venture capital from this sector. The Legislature's establishment of Kansas Venture Capital, Inc. in 1986 was a significant step in encouraging active bank participation in venture capital investments.

As expected, an abundance of individual wealth in a state and a high rate of savings are favorable factors in the development of a venture capital industry.

The existence of technical skill would be a benefit for venture capital industry; however, research has shown this factor to have only a moderate effect on the rate of technical start-ups. There has been substantial venture capital activity on the West Coast and in the Northeast where major universities are located, yet there has been very little evidence of technical entrepreneurship near other major universities, most notably the land-grant schools of the Midwest.

A comprehensive approach to improving economic conditions is also important, according to the Committee for Economic Development, a private nonpartisan group of business people who meet in Washington, D.C., on a regular basis to make economic assessments, projections, and recommendations.

A state cannot merely identify one or two things and say, "This will fix the economy." It needs a wide range of initiatives that interact with each other. States are beginning to look at their economic environments as if they were asset portfolios. Government can assist in areas that individual markets can't handle. Yet, states can take measures that don't necessarily require spending large sums. For example, low-cost initiatives would include identifying market opportunities and/or capital resources and then relaying this information to the business community; initiating regulatory changes in banking, insurance and telecommunications; and establishing loan guarantees, loan-loss reserves, and revolving investment pools.

The Need for Public Awareness

Researchers have noticed a considerable need for educating the public and the participants in the venture capital process. For example most are surprised to find the following:

a) About 80 percent of all new firms fail within 5 years.

b) It takes an average of 4.3 years for small or large firms to bring an innovation to market.

c) The innovation rate per employee of small firms is about 17 percent greater than that for large firms.

d) Research into successful ventures shows that teams perform better than one individual, and accordingly, venture capitalists usually look for a balanced team.

e) There is a 3 percent chance of a small firm securing venture capital on terms acceptable to the firm and to the venture capitalist.

f) There is only a 15 percent chance of a small firm being considered seriously for investment by a venture capitalist, and the firm needs a comprehensive business plan to qualify for such consideration.

g) A properly done business plan requires from 150 to 200 hours of hard work, which does not guarantee that the small business firm will raise enough capital.

Conclusion

In an assessment of the factors that are conducive to an active venture capital economy, Kansas does not fare particularly well relative to other states. Yet, given the current lack of an active venture capital economy, even a small improvement could have a significant impact.

Since research has shown that venture capital is the single most-often-cited reason for high entrepreneurial activity, the 1986 venture capital legislation is a substantial step forward in encouraging entrepreneurs and enhancing economic growth in Kansas.

This study was funded in part by the Institute for Public Policy and Business Research at the University of Kansas. The author wishes to thank Laurian Casson for her work and research in venture capital.

Notes

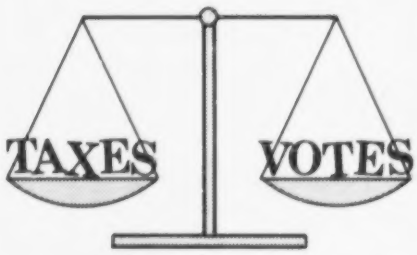
[1] Anthony Redwood and Charles Krider, *Kansas Economic Development Study*, (*Kansas Business Review*, 9(3):1-13).

[2] Albert V. Bruno and Tyzoon T. Tyebjee, "The Environment for Entrepreneurship" in Calvin Kent, ed., *Encyclopedia for Entrepreneurship*, 1980.

[3] Arnold C. Cooper, "The Palo Alto Experience," *Industrial Research*, May, 1970.

[4] Edward B. Roberts and H.A. Wainer, "New Enterprises on Route 128," *Science Journal*, December 1968. Jeffrey C. Susbauer, "The Technical Entrepreneurship Process in Austin, Texas," in Arnold C. Cooper and John L. Komires, *Technical Entrepreneurship*, Center for Venture Management, Milwaukee, WI, 1972.

Spending, Deficits, and Special Interests



James C. Miller, III

James C. Miller, III, is the Director of the Office of Management and Budget. The following article was taken from the text of his speech, delivered October 10, 1986, at the Economic Outlook Conference held at the University of Kansas. His speech reflects his adherence to the "public-choice" school of thought. Public-choice theory recently gained stature when James Buchanan, one of the founders of the public-choice theory, was awarded the Nobel Prize for Economics.

A basic premise of this school of thought is that the overriding concern of politicians is to be elected. Given this premise, it follows that politicians too readily accommodate special interest groups. Special interest groups may desire to be the benefactors of particular tax rules, particular spending programs, or some form of protection from competition, like import restrictions or industry regulation. Further, the politicians are reluctant to alienate voters by increasing taxes. One outcome of this scenario is a tax system that has something for everyone, a system where loopholes abound. Another outcome is chronic budget deficits. As Calvin Coolidge said:

> **Nothing is easier than spending public money. It does not appear to belong to anybody. The temptation is overwhelming to bestow it on somebody.**

Because of their belief that special interest groups were the basic reason for tax loopholes, public-choice adherents were among the strongest proponents of the 1986 Tax Simplification Act. Also, a constitutional amendment to balance the budget is favored by this school, which contends that only when politicians cannot increase spending without increasing taxes will the influence of special interest groups be controlled.

Introduction

If the most conservative president in two generations, supported by perhaps the smartest and most zealous budget director ever (my characterization, not his), can't succeed at trimming government spending, then it simply can't be done. Politicians—no matter how much in favor of smaller government they profess to be—will reflect their constituents', if not "special", interests and vote for new programs and the continuation of old ones. This leads inexorably to ever larger government.

The Growth of Government

Let me illustrate the nature of the problem. In 1940, just before the start of World War II, the federal government accounted for 10 percent of gross national product (GNP). This figure grew to 16 percent by 1950, 20 percent by 1970, and reached 24 percent by 1985.[1]

This rising percentage of GNP went primarily to finance an increasingly elaborate array of domestic programs. From the early 1950s, total nondefense spending grew from about 30 percent of the budget to over 70 percent at the present time.[2]

Increased Reliance on Deficit Financing

While government has been taking an increasing portion of total output, the proportion of government expenditures financed by debt rather than revenue has risen also. For the first 150 years of our history, the prevailing—indeed unquestioned—belief was that the federal budget should be balanced.[3] While deficits were unavoidable in wartime, all political parties, all presidents, and nearly all members of Congress operated on the assumption that the "norm" would be budgetary balance, and even surpluses to repay some of the debt accumulated during wars. We ran surpluses for 28 consecutive years after the War Between the States, and for 11 consecutive years after World War I, amazing as that may seem.

The first erosion of this article of faith came with the emergence of fashionable forms of Keynesian economics, which made deficits not only acceptable but even desirable during recessions.[4] However, in the period after World War II when this idea gradually became the conventional wisdom, it was also assumed that in times of prosperity the budget would be in surplus—that is, the budget would be balanced over the so-called business cycle. And looking back, up until the late 1960s this rule was roughly observed. Our deficits, when we had them, were quite small, and we even ran a few surpluses in the 1940s and 1950s.

Starting with the war in Vietnam, however, and continuing long after the war wound down, even this degree of discipline began slipping away. Deficits gradually ceased to be a respectable countercyclical tool and turned into an

Deficits gradually ceased to be a respectable countercyclical tool and turned into an escape valve for lack of political will or for political gridlock.

Politicians have an incentive to transfer wealth to identifiable groups because the benefits are concentrated, and the costs, paid by taxpayers in general, are diffuse.

escape valve for lack of political will or for political gridlock. We are now in a situation where the deficit is large, chronic, and structural—something that is characteristic of most modern democracies. The deficit was approximately $225 billion, or some 5.4 percent of GNP, in fiscal 1986—at a time of modest, though respectable, economic growth and reasonably high employment. It is not only that we have had deficits in 25 of the last 26 years; more important, recently they have become much larger—in excess of 2.5 percent of GNP in all but one of the past 10 years.

As is obvious, our federal government has the ability to transfer vast amounts of wealth through its policies. Given this ability, it is natural for groups in society with similar interests to band together and to expend economic resources to try and get some of that wealth moved in their direction.[5] Such groups can be successful because our agents in the political process—our elected representatives—don't feel the full costs and benefits of their actions. This is perhaps the fundamental reason why the political process has great trouble allocating economic resources efficiently.

As is by now a well-known story—thanks to Jim Buchanan, Gordon Tullock, Mancur Olson, and others—politicians have an incentive to transfer wealth to identifiable groups because the benefits are concentrated, and the costs, paid by taxpayers in general, are diffuse.[6] Moreover, the beneficiaries are generally well informed about their programs and who supports them while those who shoulder the burden are generally not so well informed because it is not worth their while. Politicians have an incentive to search for such issues—where well-organized groups gain and the costs are borne by everyone. Groups with similar objectives have an obvious incentive under these circumstances to organize in order to obtain the benefits government can provide.

Because the ability of groups to influence the political marketplace depends on the costs of being organized, established groups have a particular advantage. They are able to act quickly when their programs are threatened, and this explains why it is so difficult to eliminate or even reduce existing programs. Unfortunately, our record this year bears this out. Last February, the President's budget proposed eliminating 44 programs, and it appears we will be successful in terminating only two of them.

Let me recount one incident that demonstrates the ability of organized groups to protect their programs. One of our major budget themes has been privatization, and as part of this we proposed privatizing the five Federal Power Marketing Administrations (PMAs), which account for about 6 percent of the power generated in this country. Of course, the great majority of power is privately generated. Although, in general, private production is less costly than public production, the customers of the federal PMAs get their power at rates substantially below those available in the rest of the country. The reason is that the PMAs are subsidized by the general taxpayer.

Shortly after the PMA privatization proposal appeared in the fiscal 1987 budget, the American Public Power Association and the National Rural Electric Cooperative Association (NRECA) mounted a national lobbying campaign which eventually induced Congress to pass an appropriations rider banning any studies or proposals for transferring the PMAs[7] or the Tennessee Valley Authority out of federal ownership. This prohibition became law as part of the urgent supplemental for 1986.

By the way, the NRECA, which was a part of this lobbying campaign, is the same group that makes it virtually impossible to cut back subsidized Rural Electrification Administration (REA) loans to "rural" utilities and telephone companies. You will recall that REA was passed back in the 1930s in order to bring electricity and telephone service to the rural parts of the country, a task which was completed some time ago. The subsidy, however, goes on and on.

Incentives and the Deficit

Given the incentives faced by elected officials, democratic governments not only will tend to engage in too much government spending, they will also tend to engage in excessive deficit financing of public expenditures.

Large deficits are the logical outcome of individuals pursuing their self interest within the existing institutional framework. With the exception of future taxpayers—many of whom are not yet of voting age and many of whom have not yet been born—deficits create many winners and few losers. Politicians can generate support by increasing expenditures or cutting taxes, either of which directly benefit some group. Every legislator is in a position to try to confer such benefits on his or her favorite constituencies, and the incentive for any individual legislator to refrain from such behavior is virtually nonexistent. To do so would involve foregoing specific political support, without materially affecting the deficit.

Running deficits is easy because it makes people feel wealthier. Borrowing by an individual, in this sense, is quite different than borrowing by governments. An individual who borrows to buy a car, for example, does not feel wealthier relative to someone who pays cash, because he knows full well that he will have to reduce consumption in the future in order to pay off the loan. The liability for public debt, however, is dispersed throughout society and is not assigned to anyone in particular. This leads us all to underestimate the costs of deficit-financed spending. And as with any activity where the benefits are personal and the costs are social, deficit financing leads to too much spending. Taxpayers believe public serv-

Given the incentives faced by elected officials, democratic governments will also tend to engage in excessive deficit financing of public expenditures.

The costs of our regulatory programs, while substantial, are paid for in the prices of thousands of products purchased by consumers who have little idea that part of the price is going to pay a government-imposed cost.

ices have become relatively cheaper, so they demand more of them. The true cost of public services hasn't changed, of course. If we were to pay for public services as we consume them, we would want less of them.

For the same reason that politicians have an incentive to run deficits, they also have an incentive to pursue goals through off-budget or regulatory programs. The costs of our regulatory programs, while substantial, are paid for in the prices of thousands of products purchased by consumers who have little idea that part of the price is going to pay a government-imposed cost. Many of our credit and other programs create future liabilities in the same way borrowing does. But in contrast to direct borrowing, these future liabilities are virtually invisible and not even part of the political debate.

Gramm-Rudman-Hollings

All of the foregoing suggests that our political institutions, as historically structured, may not be capable of solving the problem of a government that is too big and is financed at the expense of future generations. Rather than give up in despair, we need to modify our institutions and place meaningful constraints on political behavior.

One such change occurred last year with the passage of the Balanced Budget and Emergency Deficit Control Act of 1985, better known as Gramm-Rudman. Gramm-Rudman represents a major innovation on our political landscape and, in my view, has had a very important effect on the budget as well as the budget process. To most of us who deal with such matters, it comes as no surprise that this scheme was designed by an economist, Phil Gramm.[8]

Gramm-Rudman was passed with great fanfare because elected officials, who find it very easy to vote for any new spending program, find it very difficult to vote against a law that requires balancing the budget. As you know, Gramm-Rudman mandates that the budget be brought into balance over a five-year period. As originally passed, the most noted feature of the Act was its "club in the closet," its automatic provision that mandated across-the-board cuts in much of the budget if the normal political process did not achieve the specified, declining levels of the deficit. That provision caught all the headlines. However, the version of the automatic trigger Congress enacted was held to be unconstitutional by the Supreme Court because it required the Comptroller General, an official subservient to the Congress, to perform what was clearly an executive function.

Because the constitutionality of the Comptroller General's role in executive functions had been challenged earlier, and because in negotiations on behalf of the Administration I insisted, Congress included in the Act a fall-back procedure under which any automatic cuts that might be necessary to meet the mandated deficit limits would have to be put on a fast track for approval by the House and Senate in a joint resolution to be presented to the President.

This fall-back procedure obviously makes any necessary cuts less automatic, and when the Court made its ruling many people were less confident that any such cuts, in fact, would be made. Well, what has happened?

The first thing Congress did after the Court's decision was to reaffirm the fiscal 1986 sequester of $11.7 billion, using the fall-back procedure. This, however, was not surprising inasmuch as most of the pain of those cuts already had been experienced by beneficiaries.

With respect to the fiscal 1987 budget, Congress appears to have come up with a budget deficit below the Gramm-Rudman trigger level, at least the way the deficit must be measured according to Gramm-Rudman. Thus, there will be no sequester. Moreover, the Senate attempted to "fix" the automatic trigger by giving me, as Director of the Office of Management and Budget, the final say-so. So far, the House has not agreed.

However, this should not cloud the success we're likely to experience this fiscal year with respect to both the deficit and total spending. The Office of Management and Budget as well as the Congressional Budget Office now estimate the fiscal 1986 deficit to be in the neighborhood of $225 billion, an all-time record in real, as well as nominal, terms. For fiscal 1987, the first full year that Gramm-Rudman is operative, I expect, when all is said and done, the deficit to come in under $170 billion. While that figure exceeds the $144 billion Gramm-Rudman target by $26 billion, it means that in just one year we will have reduced the deficit by at least $55 billion *without raising taxes*.

As a percent of GNP, the deficit will decline from 5.4 percent in fiscal 1986 to a projected 3.8 percent in fiscal 1987. The reason for this decline is that for the main part spending increases will be held at bay, a remarkable achievement, especially during an election year. Over the period fiscal 1980 through fiscal 1986, federal spending increased at an average annual rate of 3.6 percent in real terms; this year it will actually *fall* in real terms by approximately 2.4 percent. While a portion of this spending (and deficit) decline for fiscal 1987 can be traced to lamentable cut-backs in the President's request for defense and international affairs, the message of the figures just cited holds up even when you focus on domestic spending: rather than rising at the fiscal 1980 through fiscal 1986 average annual rate of 1.4 percent in real terms, this coming year domestic spending will fall by about 3.0 percent in real terms.

Over the period fiscal 1980 through fiscal 1986, federal spending increased at an average annual rate of 3.6 percent in real terms; this year it will actually *fall* in real terms by approximately 2.4 percent.

A permanent solution to the problem of excessive government spending and borrowing requires a constitutional change to restore the discipline we had for most of our history.

In sum, Gramm-Rudman has changed the rules of the game—at least for this year. We now have replaced President Carter's ill-fated "zero based budgeting" with what I call "zero-sum" budgeting. Anyone proposing a new spending measure must come up with some way to finance it, either a spending offset somewhere else or an increase in revenues. This coming year not only will the deficit be lower, but federal spending (in real terms) will actually decline.

One reason Congress complied with the requirements of Gramm-Rudman during its first year is that the political pressures to do so were substantial. It would have been quite embarrassing, only months after passing the law, not to meet its requirements. As time goes on, however, it is reasonable to expect those pressures to weaken. And, as many have noted, what Congress does, it can undo. That is why, in my view, we need to look toward more permanent, constitutional solutions to the problem.

A permanent solution to the problem of excessive government spending and borrowing requires a constitutional change to restore the discipline we had for most of our history.

In the absence of the type of commitment implied by a constitutional change, there is less reason for individuals at any particular point in time to undergo the sacrifice required to reduce spending or balance the budget. Why should we, in 1986, reduce spending—knowing that next year or the year thereafter a new political coalition could make the sacrifice we have undergone virtually meaningless? If, however, individuals could be assured that their current sacrifice would be reflected in permanent increases in future disposable income, they would be much more willing to make such a sacrifice.[9]

Along with President Reagan and 71 percent of the American public, I also support a line-item veto.[10] A line-item veto would enable the chief executive to excise some of the most flagrant special interest spending that all contemporary presidents have been forced to accept in the context of more general spending bills. One possibility might be to provide the President with sufficient line-item veto authority to bring the budget into balance or, in the short run, to meet the Gramm-Rudman deficit targets. This would be a better fix than giving sequester authority to the Office of Management and Budget. Another possibility would be to guarantee the President an up-or-down vote on proposed rescissions.

I would like to express my appreciation to Tom Lenard for his advice and suggestions in the preparation of this lecture, and to Bob Tollison for his comments on an earlier draft. The usual caveat applies. Portions of this address have been adapted from remarks I made before a seminar sponsored by the Federal Trade Commission [see The Political Economy of Regulation: Private Interests in the Regulatory Process *(Washington, D.C.: Federal Trade Commission, 1984), p. 293], the National Press Club (November 1, 1985), and the U.S. Chamber of Commerce (July 17, 1986).*

Notes

[1] *Historical Tables, Budget of the United States Government, 1987* (Washington, D.C.: U.S. Government Printing Office, 1986), Table 1.2.

[2] *Ibid.*, Table 6.2.

[3] Richard E. Wagner, Robert D. Tollison, Alvin Rabushka, and John T. Noonan, Jr., *Balanced Budgets, Fiscal Responsibility, and the Constitution* (Washington, D.C.: Cato Institute, 1982).

[4] See James M. Buchanan and Richard E. Wagner, *Democracy in Deficit: The Political Legacy of Lord Keynes* (New York: Academic Press, 1977); and James M. Buchanan, Charles K. Rowley, and Robert D. Tollison, eds., *Toward a Political Economy of the Deficit* (Oxford: Basil Blackwell, forthcoming).

[5] For a review of this literature, see Robert D. Tollison, "Rent Seeking: A Review," *Kykios* (1982), pp. 575-602.

[6] See James M. Buchanan and Gordon M. Tullock, *The Calculus of Consent: Logical Foundations of Constitutional Democracy* (Ann Arbor: University of Michigan Press, 1962); and Mancur Olson Jr., *The Logic of Collection Action: Public Goods and the Theory of Groups* (Cambridge, MA: Harvard University Press, 1965).

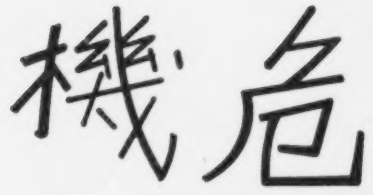
[7] The Alaska PMA was excepted.

[8] A similar scheme was advanced by another economist, Martin Anderson. See Anderson, "The Budget Amendment—Not So Crazy After All," *New York Times* (August 30, 1985).

[9] See James M. Buchanan, "The Budgetary Bias in Post-Keynesian Politics: The Erosion and Potential Replacement of Fiscal Norms," in Buchanan, Rowley and Tollison.

[10] See "Line-Item Veto," *Gallup Report* (October, 1985).

Economic Development Challenges for Kansas



Belden Daniels is president of Counsel for Community Development, Inc. His firm has worked with more than 37 states, and he is currently under contract to provide development assistance to several states and cities, including Maine, Oregon, Oklahoma and Kansas. The following article was taken from a transcript of his speech, given October 10, 1986 at the Economic Outlook Conference held at the University of Kansas.

It is very rare in the Chinese language to have double character words, but as some of you may know, the word "challenge" is such a word. The right character is the word for danger, and the left is for opportunity. The Chinese characters for "challenge" describe being on the cutting edge. It is either a situation of extraordinary peril, or it is an opportunity.

Basically, I am going to divide my talk into part one, the danger in which we are all living, and then part two, the tremendous opportunity presented by the economic development initiatives that were passed in the legislative session. Those initiatives put Kansas on the cutting edge in the world today in terms of opportunity. Finally, I will give you a sense of where things are here in the state right now.

The Historical Perspective

First it is important to step back for a minute, before we get to danger and opportunity, and think about where we are at this remarkable time in human history. Marshall McLuhan, in many ways the first philosopher of the information age, observed that the fish is the last creature to understand the pool in which it is swimming. We should think carefully about that idea.

We are in the midst of one of the great epochal changes in human experience, in institutions, in politics, society, culture, and economics. Since we came out of the trees 300 millennia ago and became hunters and gatherers, the first great epochal change in human experience, we have gone through three periods, each dominated by a new technology. It was actually cooking that brought us from the hunter-gatherer age to the agricultural age. The discovery of the technology of cooking led to great storehouses: the storehouses called cities and silos; libraries, the storehouses for knowledge; and the citadel, which is the storehouse of arms. All the great storehouses came out of the technology of cooking, which started the age of agriculture.

With James Watt's discovery of the steam engine in 1769, the industrial age began. But to the generation of people who are adults today, the characteristics of the industrial age seemed to be characteristics of life rather than of a fleeting epoch. How many people realize that the industrial age is less than 300 years old?

Then Charles Shockley brought in a new epoch only 30 years ago, when he invented the transistor. The process is speeding up: three hundred millennia for hunting and gathering, to 13 millennia for agriculture, to a third of a millennia for industry, to 30 years for the computer age. It is hard to believe that only 30 years ago there were only four computers in the world. The rate of change is exponential, and it is proceeding at the speed of light. Ten years ago if we had tried to manufacture a computer with the capability of a Macintosh, that computer would have cost a million dollars. We think of satellites as being the ultimate in high-tech industry, but in fact satellites are a mature, has-been technology. By next year we will have a fiber optics cable that will surround the world, and we'll no longer have the ping when we talk on our telephone.

The Dangers Facing the United States and Kansas

This extraordinary dynamism is introducing extraordinary danger into our lives. A radical structural change is taking place right before us.

In terms of dangerous situations facing all of us today, there are four examples: 1) agriculture, 2) oil, 3) industry, 4) finance.

Agriculture

We are experiencing radical global changes in terms of agriculture, and we have to understand that fact, live with the danger, and recognize the opportunities.

The short six-year period of President Reagan's administration demonstrates the radical changes that have taken place. We have lost one-quarter of U.S. farms, a quarter of a million farms in just that six-year period. We have lost one million jobs, 17 percent, in the food service industry. A third of those million are farmers; another third are grocery stores, banks, and moviehouses in small towns, which are tied to the farms; and the final third are in the food chain. The same 17 percent employment gain in food distribution and food service in urban areas

The Chinese characters for "challenge" describe being on the cutting edge. The right character is the word for danger, and the left is for opportunity.

To the generation of people who are adults today, the characteristics of the industrial age seemed to be characteristics of life rather than of a fleeting epoch.

has been lost in agriculture and related sectors.

The portion of the food dollar spent on beef in the American foodbasket has dropped from 22 cents to 17 cents during the past six years. One hundred thirty thousand jobs have been lost in food processing, with 24 thousand lost in beef processing and 24 thousand gained in chicken processing in just these six years.

Petroleum

As of December 31, 1985, there were 51,888 wells in Kansas. Ninety percent, 45,749, of those were stripper wells that will all be permanently shut down within five years.

Refineries in this area are Oklahoma sweet refineries. Most of the petroleum that is being imported into the United States is sulphur petroleum, which cannot be refined in this type of refinery. There are 42,000 petroleum engineers in the United States. Ten thousand of those, 25 percent, are unemployed.

Industry

We are working in Shreveport, Louisiana, one of the most diversified cities in this part of the world. Shreveport is about the same size as Wichita. Years ago, Shreveport's leaders were excited when AT&T decided to concentrate all of its domestic telephone production in their city. We advised them the plant was on roller skates, or better yet, on airplane wings, landing here briefly before it flew overseas. And within about 14 months that plant moved to Singapore.

The New York Times, *The Wall Street Journal*, and *CBS News* were all there with a knee-jerk, isn't-this-awful reaction. It was fascinating that a year and a half ago when that plant closed the private and public sector leadership of Shreveport was relaxed, calm. They understood that the plant was going, they had planned for their future, they had built their future, and they were on their way.

Finance

In 1980 the United States was absolutely the dominant financial center of the world. Once the sun never set on the British Empire, then the sun never set on Citibank. When I was starting out as a young banker, there was no financial institution in the world greater. There was still no bank in the world greater than Citibank in 1980. In 1986, of the top ten financial institutions in the world, eight are Japanese, only one is American: Citibank is now number five and sinking fast.

Capital now moves around the world at the speed of light. Capital *is* the speed of light with computers and electronics on fiber-optics tape.

In spite of this dangerous environment, Kansas, with the private and public sectors acting together, has a second chance to live with this danger and seize the inherent opportunity.

Fifteen years ago in Massachusetts we were much worse off than Kansas is today. We had 128,000 engineers out of work, with an unemployment rate consistently double the national average. People in Springfield didn't trust people in Boston, people in Lowell did not trust people in New Bedford and Fall River, the private sector didn't trust the public sector, and the Executive didn't trust the Legislative. There were lots of problems.

Massachusetts is now the Japan of the United States because three things have happened. 1) We brought the private and the public sectors together. 2) On the demand side we found that our population was declining relative to the rest of the United States, and our per capita income was also declining. Therefore we concluded that we couldn't sell only to ourselves and expect a strong economy: we had to export. 3) On the supply side we found that we had no natural resources, no energy sources, and expensive land. Everything in Massachusetts—people, transportation, in fact every factor of production—was either scarce, nonexistent, or extraordinarily expensive.

We concluded that since the only thing that we had to sell was our wits, we would have to collaborate in order to maximize them.

Anytime an industry gets rationalized, like the Shreveport telephone plant, it is going to move overseas, so we have to innovate. In Massachusetts today computers are considered uninteresting, capital-intensive—a mature industry. The future for us is fiber optics, biotechnology, and artificial intelligence. We always have to be inventing a new future because as soon as we rationalize anything it is going to be gone.

What was true of New England fifteen years ago in relation to the rest of the United States is now true of *all* of the United States today, including Kansas. We are a declining part of the world market, relatively declining in per capita income, relatively declining in population base. On the supply side we have high costs and scarce or nonexistent natural resources. We have a second chance only if we are going to be willing to live by our wits, if we are going to have the guts to do it, and if we care enough to do it. We are on the cutting edge, and whether it is uncomfortable or exciting is up to us.

Kansas Initiatives

Some of Kansas's initiatives are in the following areas: 1) internal improvements; 2) basic and applied research and technology transfer; 3) venture capital; 4) mezzanine finance; 5) long-term capital; 6) the Legislature and the Executive, and 7) Kansas, Inc.

Once the sun never set on the British Empire, then the sun never set on Citibank. In 1986, of the top ten financial institutions in the world, eight are Japanese, only one is American: Citibank is now number five and sinking fast.

We are on the cutting edge, and whether it is uncomfortable or exciting is up to us.

The Kansas initiative will be discussed in terms of the status and prospects for Kansas and, in some cases, for the nation.

Internal Improvements

The internal improvement vote was a decision on the part of Kansas about whether it was going to face back or face front. I knew Kansas was coming together when all of the private and public sector leadership of the state united saying, "The issues of all of these initiatives are too important to be left to politics, too important to be left to business as usual." Representatives and senators who were not even running for office told their constituents that it was important to vote for the internal improvements amendment. Since that constitutional amendment passed, the status and the outlook is excellent.

Basic and Applied Research and Technology Transfer

The booming areas of the United States today, the Boston area; the San Francisco Bay area; North Carolina; and Austin, Texas; to name four, are distinguished by three things: by wits, by an enormous investment in basic and applied research, and by an enormous willingness to take risk, which has united the private and public sectors. These sectors and the universities in these booming areas know how to work together on a minute-to-minute, day-to-day basis. One of the most important comparative advantages that we have over other nations, perhaps America's only competitive advantage, is our wits, our ability to innovate, our ability to invest in human capital. The top 20 universities in the world today, unlike the banks and unlike most other areas of creative human endeavor, are all American. They are all in the United States, and they are a great asset. But they are a wasting asset unless they are hooked up with productive enterprise.

What research and technology transfer is going on in the Rust Belt? The Ben Franklin Partnership in Pennsylvania is the standard. On a biennial basis a $20 million investment by the state in the Ben Franklin Partnership is being matched by $80 million of Pennsylvania private sector and university investment to create one of the wittiest environments in the United States today. Pennsylvania has a future, it is endangered, but there is great opportunity.

In Ohio, the Thomas Alva Edison Partnerships are funded with $35 million on a biannual basis from the state of Ohio and $75 million from the private sector.

At Oklahoma State University, $15 million from the public sector and $15 million from the private sector are creating a Center of Excellence in agriculture, agribusiness, biotechnology, and renewable resources. Thirty million dollars were raised for poor Oklahoma. For the University of Oklahoma, $15 million from the public sector and $30 million from the private sector are making a world-class Center of Excellence for energy research.

Arkansas is 49th in almost everything. Yet Arkansas, through the Arkansas Science and Technology Authority, in just the one year it has been in operation, has thirteen enormously innovative partnerships between the public sector and the private sector in Fayetteville, Jonesboro, and Little Rock. Arkansas raised taxes to make an investment of $10 million for the program, which is generating four dollars of private sector and federal money for every state dollar invested.

We have consumed 120 billion barrels of oil in the history of the United States. Only 30 billion of proven reserves remain, unless we have tertiary recovery. With tertiary recovery there are more than 300 billion barrels of reserves in the United States, more than 10 times the present proven reserves, more than double the total amount we have consumed in our history. If we can develop tertiary recovery and make it economical, our nation will be much stronger, not only from a national military standpoint, but from a national economic standpoint in terms of our trade deficit. The world-class tertiary recovery research is going on at the University of Kansas.

Wichita State University attracts a third of a billion dollars of private sector investment on an annual basis in basic and applied research through Boeing, Beech, Cessna, Lear, and Coleman. This is a tremendous investment, but one that could fly at any moment. It could move to Stanford, Austin, or the Massachusetts Institute of Technology easily. This investment in research must be retained in this state, which will require an investment in Wichita State University.

Kansas now has an extraordinary new institution, the Kansas Technology Enterprise Corporation. A partnership of the private and public sectors, it covers basic research, applied research, and technology transfer. At issue is whether or not we care enough to finance those institutions the way that Pennsylvania, Ohio, Arkansas, and Oklahoma have.

Venture Capital

This year we had $3 billion of venture capital invested in the United States. A third was invested in northern California, a third in Massachusetts, and the other third was divided among the rest of the United States. This is intolerable! Two percent of venture capital is invested in the great swath of the United States from the Dakotas all the way down to the Gulf. How much of that $3 billion in formal organized venture capital was invested in Kansas six months ago? Zero.

There is tremendous innovation going on in the United States. The largest venture capitalist in the entire world today is the Michigan Public Pension Fund, which invests half a billion dollars in venture capital.

In Kansas, as a result of recent legisla-

Representatives and senators who were not even running for office told their constituents that it was important to vote for the internal improvements amendment.

tion, up to $24 million of venture capital qualifies for a tax credit in Kansas. In Lawrence, Cedar Vale, Hillsboro, Colby, and Newton, there are people with ideas for venture capital firms.

Mezzanine Finance

The Massachusetts Capital Resource Corporation is a good model for a mezzanine financing group. Fifteen years ago we found that Massachusetts had a $100 million insurance industry, which had not made one single loan in Massachusetts in the preceding five years.

An insurance pool was created to fund established businesses. During the first year, a funny little struggling immigrant company was selling in Massachusetts. The owner had recently come to the United States and didn't speak English very well. Nobody knew what he made. The company was grossly undercapitalized. The Bank of Boston wanted to pull the plug on it and throw it into Chapter 11. The insurance pool, because of the new tax credit, made a deal: they offered $5 million in ten-year, unsecured, subordinated notes with warrants attached. Last year that company had $4.5 billion in sales, 28,000 new jobs had been created in Massachusetts, and we finally know the name of the entrepreneur and what they make at Wang Laboratories.

The most fascinating thing about that $100-million pool is that it defied our design and our expectations. We thought it was all going to be for Wangs, but 60 percent of the assets of that pool have not gone into financing high-tech industries. Instead, 60 percent have gone into traditional Massachusetts industries: shoes, leather, textiles, paper, jewelry, and fish processing. New money has transformed them: annual reports are now featuring 150-year-old shoe eyelet firms transformed into new-age innovative firms, rapidly growing and profitable, with new products, new processes, new technologies, new production techniques, new managements, new markets.

Firms can be reborn, and with Kansas Venture Capital, Inc., prospects in Kansas are excellent. Kansas business people have great opportunities for raising venture capital: Kansas Venture Capital, Inc., will have $10 million on hand to match bankers' equity investments.

Further, the Kansas Public Employee Retirement System invests 10 percent of its assets in the Kansas Investment Fund which in turn invests the money in Kansas business. Think of this with the problems in this state, the danger in this state, and the opportunity.

Long-term Capital

Last year one-half of all industrial deals in the United States were done in Massachusetts through a $5-billion, publicly chartered, public-purpose institution operating in the private sector called the Massachusetts Industrial Finance Agency. The agency provided industrial firms with 30-year, fixed-rate loans one full point below prime.

The Arkansas Development Finance Authority, a $1.5-billion institution, in only two years has become the largest single importer of capital in Arkansas.

The Kansas Legislature and Executive

The Legislative Economic Development Commission, chaired by James Braden, is as good as anything in the United States today. This remarkable group of ten bipartisan members has become two permanent well-staffed standing committees this year. Kansas will be as up-to-date as any state in the nation.

The Kansas Department of Commerce, as designed, also represents the current state-of-the-art in the United States. Because of wonderful cooperation, you couldn't tell the difference between the Democrat Executive and the Republican Legislature as we put the economic development legislation together.

Kansas, Inc.

The private sector is the engine of the economy. If the private sector does not buy into a commonsense agreement on the solution, nothing is going to happen. In Kansas the leadership in the private sector from all sectors across the state has bought in. Last January the Kansas Chamber of Commerce and Industry, the Kansas Bankers Association, and the Kansas Farm Bureau, on the same piece of paper, endorsed all of the initiatives in the Redwood/Krider report.

As a result of last year's legislative action, economic development policy for Kansas will be established in part by Kansas, Inc. Six of its 15 members must represent Kansas's major industries.

Kansas, Inc., is modeled on the Indiana Development Council. *The Economist*, the finest journal in the world on economics, on June 14th called Kansas, Inc., the closest thing that the United States has yet seen to Japanese MITI. The current status shows great promise, but the outlook depends on the new governor.

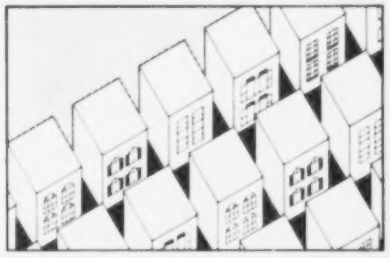
Conclusion

In conclusion, Kansas leaders are asked to design a plan and implement it. The *Kansas Economic Development Study*, by Anthony Redwood and Charles Krider, is the finest single job that any state has ever done of looking danger straight in the face and recognizing extraordinary opportunity. The excellent planning was recognized by the National Conference of State Legislatures in August. But it is only a plan.

Everything that has been done in Kansas to date is the easy part. Conceiving that plan, designing that plan, passing the plan through the Legislature, remarkable as all of that may seem, that is the easy part. The implementation is the hard part. The implementation is where wits, guts, and concern really come out. And that is absolutely, 100 percent up to the citizens of Kansas.

The booming areas of the United States today are distinguished by three things: by wits, by an enormous investment in basic and applied research, and by an enormous willingness to take risk, which has united the private and public sectors.

Of Special Interest to the Small Business Owner and Operator . . .*



Management Trends Focus on Quality

Lawrence A. Sherr
Carolyn Coleman

Lawrence A. Sherr is Chancellors Club Teaching Professor and Professor of Business at the University of Kansas. Carolyn Coleman is editor of the *Kansas Business Review*.

These days many Kansas managers are evaluating a set of ideas aimed at improving the quality of company outputs: the goods and services that they sell to their customers. Interestingly enough, these ideas are imported directly from Japan. Proponents of this approach to improving product quality claim that it is a primary factor in the Japanese economic success in world markets.

In recent years, midwestern businesses have suffered difficulties with competition from foreign producers and with output quality; the automobile industry has been one of many examples. The *Kansas Economic Development Study* has shown that a continuation of existing trends will not provide an acceptable level of economic welfare for Kansas.

Proponents of management focusing on quality attribute many of the current economic difficulties to out-dated management. They believe that a new focus on quality would vastly improve the economic well-being of Kansas business and therefore of all Kansans. Naturally there are many skeptics. But if methods of improving product quality might increase total revenue from Kansas products, they must be examined seriously. "The harsh reality of the world economic order is that those industries which develop and apply new knowledge the most rapidly and the most efficiently will be the ones with the competitive edge."[1] The Japanese have recognized that valuable knowledge is not limited to technology, but includes management practices. Without good management, the full rewards of technology cannot be realized.

Deming's Success in Japan

Last year the Union of Japanese Scientists and Engineers presented the Deming Prize to a Japanese company to recognize significant improvement in that company's product quality. It did so on nationwide Japanese television. This award, which was established in 1951, is a gold medal with a portrait of the American statistician, college professor, and consultant W. Edwards Deming. The Emperor of Japan frequently attends this ceremony. In 1960 he personally honored Deming for his contribution to Japanese industrial development.

Deming, now 85 years old, first developed and helped implement these ideas in 1940 while working for the United States Bureau of the Census. There he was concerned with accuracy of key punch operators in entering census data. A few companies used some of his notions about how to produce high quality products during the Second World War. But afterwards, as managers returned to their civilian jobs, Deming's ideas were either ignored or forgotten. In 1950 he was invited to speak in Japan. In a classic instance of a prophet being honored in a foreign land, many leaders of Japanese industry took his ideas to heart.

Deming's Emphasis on Quality and Management's Obligations

Deming begins with the notion that a business must produce a quality product or service that does not disappoint the consumer, and it must produce it at a low cost. His work concerns how businesses go about this task. Some skeptics say quality output at low costs is self-contradictory.

Deming has developed a list of 14 management obligations to accomplish his dual objectives. Some of these are based on techniques of statistical quality control, others on his notions of organizational behavior. We will present a few of his major points, along with some contrary positions.

Statistical Quality Control

First, statistical quality control: If you ever wondered how pollsters are able to predict the outcome of a presidential election from a sample of less than two

* This article is sponsored by the U.S. Small Business Association and the Kansas Small Business Development Centers.

. . . many factories still examine all output and then either rework or scrap defective products.

thousand voters, or how television ratings are prepared even though you have never been asked what programs you watch, you have been asking yourself what statistical inference is about. Statistics can be thought of as the science of taking a sample and using this information to make generalizations about much larger populations.

Industrial production makes much use of this science. Suppose that a company guarantees that its light bulbs will burn at least a thousand hours. If it were to test each and every light bulb there would be no product to sell. Instead, it must sample its output. Another common reason for sampling is that a complete examination would be too costly or time consuming—imagine making a complete examination of a day's output of thumbtacks.

Nonetheless, many factories still examine all output and then either rework or scrap defective products. Deming claims that between ten and forty percent of manufacturing dollars are wasted this way. This is expensive and indicates that managements know that some output is defective.

Other factories use statistical sampling but tolerate some percentage of defective products. Deming argues that this will eventually result in higher costs through lost sales or through rework when the customers returns the product. He says that management must take responsibility for turning out a final product with no defects. He does admit that defects can not be completely removed from some goods. But he insists that if the only form of quality control used is to inspect output after it is otherwise ready to be shipped, it is very doubtful that the company has reached minimum defects.

Quality Ingredients

Rather than relying on such final inspection to control quality, management must accept the responsibility to design the production process so that quality is guaranteed from beginning to end. This in turn means suppliers of the company's raw materials or parts must follow the same philosophy and that often management will improve quality and lower costs by using a single suppler who will guarantee quality and work with management as part of a team to design a total system that yields a high quality good.

The FMC plant in Lawrence, Kansas, provides an example of how suppliers who guarantee quality and who work with purchasers can save customers' money and thus gain market share. Among the Lawrence plant's products is sodium phosphate, which is sold to detergent manufacturers. Variability in water content of the chemical forced the customers to spend a lot of time and money testing water content of the sodium phosphate before the amount of other ingredients to add could be determined. At FMC, management was aware that the amount of water in the sodium phosphate varied too much. While the production people believed the variability was inevitable, management believed that the problem was due to inattention of machine operators.

Deming's methods, adopted wholeheartedly by management, revealed that neither was true. The production people had been trained to over-adjust: when a test showed too much moisture, the operator promptly adjusted the water sprayers, and soon a test would show that the product was too dry. Again, the sprayers would be promptly adjusted, there would next be too much moisture, and the cycle would continue. Statistical analysis showed that the sprayers shouldn't have been adjusted until six tests showed undesirable water content.

Once the over-adjustment problem was addressed, management could see that the scales that weighed the dry sodium phosphate were not accurate enough. The amount of water sprayed on the sodium phosphate was supposed to be determined initially by how much the chemical weighed. New instrumentation was purchased, and variability decreased further.

Meanwhile, the relationship between FMC and its detergent-manufacturing customer was improving dramatically. Instead of taking its process as a given, FMC was asking its customer what the optimum variability of moisture content would be, and it was using Deming's methods to reach that optimum. The customer could save money on testing: FMC promised a specific and small amount of variability. As a result, FMC was able to increase its market share.

These ideas run counter to the common, sensible-sounding practice of taking the lowest bid on supplies. Skeptics also argue that they have enough difficulty running their own business without having to be concerned with their suppliers' operations and that they need more than one supplier to protect themselves if for some reason an individual supplier is unable or unwilling provide needed inputs.

A Humanist Approach to Workers

Deming also argues that employees must be given good tools to work with if they are going to make good products. This can be expensive. Moreover, Deming says that these should include tools that workers can use to check their own work rather than having a inspector do it. This implies that all employees must believe that they are part of a team and part of an environment that allows them to contribute—not only through their immediate work, but through assisting the design of the product and the production process.

In essence, Deming says that management is responsible for quality: if quality is low it is not the workers' fault but management's, since management is responsible for the inputs, the tools, the process design, the environment, and the job training. A well-managed company treats not only customers, but all employees and suppliers, as people not as commodities. Deming is a humanist.

Rather than relying on such final inspection to control quality, management must accept the responsibility to design the production process so that quality is guaranteed from beginning to end.

In essence, Deming says that management is responsible for quality: if quality is low it is not the workers' fault but management's, since management is responsible for the inputs, the tools, the process design, the environment, and the job training.

Conclusion

Skeptics argue that Deming's methods may work in Japan, where the culture is quite different and plants do not have American unions, but that it is unclear that Kansas employees want to be part of such a team. Deming's approach requires a complete rethinking of all facets of the business. Quality must be built in at every step. Management must be concerned with total costs, including costs of dissatisfied customers, not just production costs. Expenses of such a rethinking would be enormous and may exceed the benefits.

There are many explanations of why Japanese companies have succeeded during the last 30 years. These include the cost of labor, cultural differences, undervaluation of the yen, and economic protectionism. But anyone old enough to remember the quality image that the words "Made in Japan" brought to mind in the 1950s must be impressed by what these companies have accomplished during the last three decades.

Are the Japanese correct to think that Deming's teachings played an important role there? Will his ideas really work in Kansas? Is this a development of lasting value?

Deming and his followers believe that these ideas and concepts will work in manufacturing and service industries, government, hospitals, and educational institutions. They claim that if we do not make the changes that these ideas demand, our country will continue to lose its position in world markets. If they are right Kansas management's decisions about whether or not to listen to Deming will affect all of us.

There is no question that Deming's philosophy is having a significant impact on the nation. There is incredible enthusiasm from his early followers, particularly in the Ford Motor Company, certain divisions of General Motors, Proctor and Gamble, and General Electric. The Boeing Company in Wichita sponsored a week-long management seminar last August where Deming himself explained his theories.

Yet careful reading of his writings makes clear that Deming is not promising a quick fix and that he does not offer many specific answers. What he does instead is raise excellent questions. If the adopters of Deming's ideas concentrate on identifying and solving quality problems in ways that are appropriate to their own circumstances, rather than merely imitating Japanese responses to Japanese situations, then his philosophy has great potential. If the adopters refuse to engage in such hard thinking and expect quick results, Deming's ideas will soon lose their popularity.

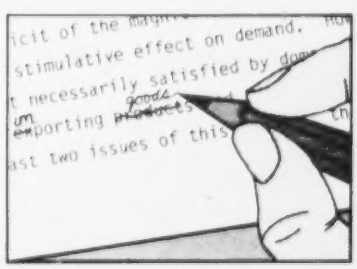
Deming says that under-use, abuse, and misuse of the people of this country make us the world's most underdeveloped nation. An exaggeration? We are not sure. But we are convinced that it is something for all of us to think about.

For those who would like to read more about W. Edwards Deming and his fourteen management obligations, we suggest these two books: Nancy R. Mann, The Keys to Excellence—The Story of the Deming Philosophy, *Los Angeles: Prestwick Books, 1985, and* W. Edwards Deming, Out of the Crisis, *Cambridge, MA: Massachusetts Institute of Technology, Center for Advanced Engineering Study, 1986. For those who would like to learn more about systematic approaches to improving quality, Professor Sherr will speak at the seminar described on page two.*

The authors would like to thank Joel Jacobs, manager of FMC Corporation in Lawrence, for his assistance.

Note

[1] *Kansas Economic Development Study: Research Studies*, Volume II, pp. 1-64. Institute for Public Policy and Business Research, June 1986.



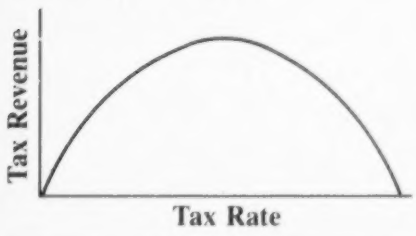
Research Note

The Laffer Curve in Kansas

The Laffer curve refers to a relationship between tax rates and tax revenues. The original conception of this curve, as drawn by Arthur Laffer in 1976, depicts a possible inverse relationship between tax rates and tax revenues after a certain critical tax rate is reached. Generally the curve is thought to be U-shaped as depicted in Figure 1. It pictures the idea that tax rates could get so high that people would be discouraged from working, and tax revenues would decrease.

As David Faurot in a recent *Kansas Business Review* noted, this relationship operates because of the effect taxes have on incentives. Once an economy is past some critical point, there are benefits to be reaped by lowering the tax rate, including increasing tax revenues to the government.[1]

Figure 1
The Laffer Curve



The purpose of this research note is to investigate the shape of the "Laffer curve" for Kansas. We will first review some of the literature on the Laffer curve and then present the results of our study.

Two hundred years before Arthur Laffer developed this concept, Adam Smith wrote in *Wealth of Nations*,

> High taxes, sometimes by diminishing the consumption of the taxed commodities, and sometimes by encouraging smuggling, frequently afford a smaller revenue to government than what might be drawn from moderate taxes.[2]

And in 1844 Jules Dupuit noted, "By gradually increasing the tax, it will reach a level at which the yield is at a maximum . . . . Beyond, the yield of tax diminishes . . . . Lastly, tax (which is prohibitive) will yield nothing."[3]

In 1978, Canto, Joines, and Laffer examined the possible relationship of taxes to tax revenue in a simple theoretical model, but did not test their results with actual data.[4]

Laffer Curves for Regions

Most researchers, when referring to the Laffer curve, are considering the economy on the national level. Very little has been done on the regional level. An empirical study done in New York concluded, "The inclusion of state taxes lost when economic activity leaves both the city and state would . . . raise the possibility of a net revenue loss as a result of an increase in business income taxes."[5] It makes good economic sense to consider the possibility of a Laffer curve on a local or regional level, especially when considering taxing those factors that are mobile. The New York study noted that business that engaged in manufacturing tended to leave the city when tax rates became prohibitive, but that the nonmanufacturing establishments remained in New York City even with the higher taxes, perhaps because there were few alternatives.

A similar study was done in Philadelphia with similar results, except that the nonmanufacturing sector was more mobile. In that study the researchers concluded, "Philadelphia may have been at or very close to the revenue maximizing point . . . before the recent income tax increase, which raises the possibility of it having been in excess of the socially optimal one."[6] Thus, they found that Philadelphia was operating on the downward sloping section of the Laffer curve, so increasing the tax rate resulted in decreasing tax revenues to the city.

Constructing a Laffer Curve for Kansas

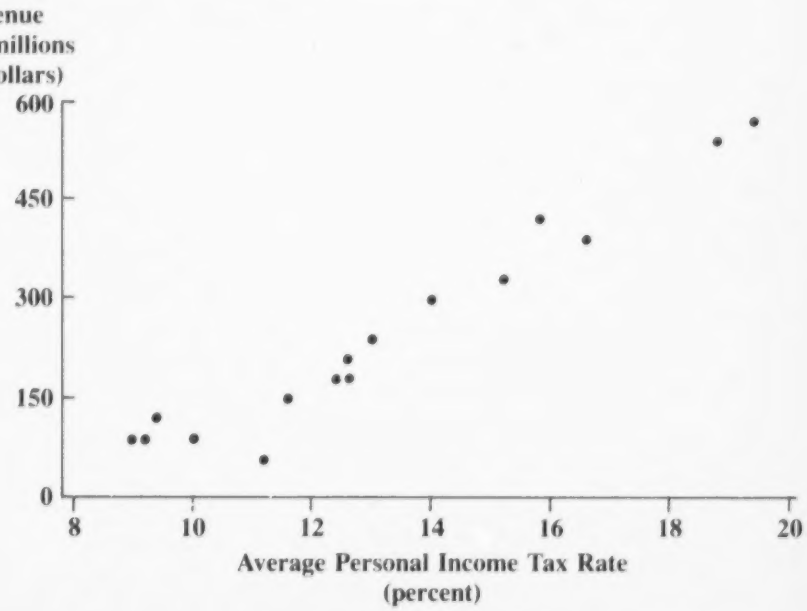
The choice of which tax to consider is important, and one criticism of the Laffer curve is that it does not consider the various tax rates. In the New York study mentioned above, the investigators considered business taxes because they were interested in finding their effects on whether or not business remained in the city and their consequences. Labor theorists, however, would consider the personal income tax rate to be most relevant in determining the effect on incentives to work and earn money. We decided to consider personal income tax as the variable that determines tax revenues to the state. Theoretically, marginal tax rates are the relevant tax rates in economic analysis, but, for ease of calculation, the average tax rates are used.

The average personal income tax rate was calculated by dividing the tax revenues obtained from the state personal income tax by the total personal income earned in the state. We then regressed revenue collected from the personal income tax on the average personal income tax rate, or $Y = B_1 + B_2 X + e$, where Y = the revenue collected; X = the average personal income tax rate; e = error term; B_1 = a parameter; and B_2 = the change in Y that will result from a change in X.[7]

Results

On the state level, the Laffer curve may be viewed as a model to predict tax revenues for the state. From this viewpoint the above equation implies that the tax rate predicts tax revenues with all other influences located in the error term. For example, fluctuations in GNP, the effect of the federal income tax, the state sales tax, etc., are all located in the error term.

Figure 2
Personal Income Tax Revenue in Relation to Tax Rate



We found that the relationship between X and Y is almost a straight line, as can be seen in Figure 2. Further, the regression equation proved to be highly significant, that is, the error term was statistically small. This means that the average personal income tax rate is a good predictor of state tax revenue. Therefore, an increase in the personal income tax rate would generate more revenue for the state: Kansas is not operating on the "wrong side" of the Laffer curve.

One must always be cautious about making conclusions outside the bounds of a study. We are statistically safe in making statements about personal income tax revenue for the tax rates observed. But tax increases beyond what we have observed will only increase tax revenue if Kansas is not on the turning point of the Laffer curve. The next tax increase could push tax revenue the other direction.

Further, taxes can act as a disincentive, and although this research indicates that Kansas is not yet on the wrong side of the Laffer curve for the personal income tax, tax increases may still stifle possible growth. We need to be aware of that possibility in analyzing policy for the state.

Frank Hefner
Research Assistant
Institute for Public Policy and Business Research

Marcia Heideman and Kay Howard, students at Washburn University, assisted in this study.

Notes

[1] David Faurot, "Income Tax Reform," *Kansas Business Review*, 8(3-4):12-15.

[2] Adam Smith, *An Inquiry Into the Nature and Causes of the Wealth of Nations* (Chicago: University of Chicago Press, 1976).

[3] Jules Dupuit, "On the Measurement of the Utility of Public Works," In Kenneth Arrow and Tibor Scitovsky, eds., *Readings in Welfare Economics* (Homewood, IL: Richard Irwin, Inc., 1969).

[4] Victor Canto, Douglas Joines and Arthur Laffer, *An Income Expenditure Version of the Wedge Model* (University of Southern California, mimeograph, 1978).

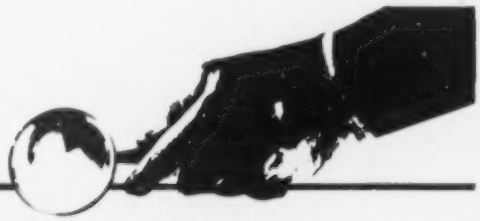
[5] Ronald Grieson, William Hamovitch, Albert Levenson, and Richard Morgenstern, "The Effects of Business Taxation on the Location of Industry," *Journal of Urban Economics*, 4(April, 1977):170-185.

[6] Ronald Grieson, "Theoretical Analysis and Empirical Measurements of the Effects of the Philadelphia Income Tax," *Journal of Urban Economics*, 8(July, 1980):123-137.

[7] Data were found in
a) *Kansas Tax Facts*, 1985 Supplement to the Fifth Edition, Kansas Legislative Research Department, October 1, 1985.
b) *Kansas Statistical Abstract, 1978*. Center for Public Affairs, University of Kansas.

Economic Conditions

The National Review



Third-quarter GNP grew by 2.9 percent at an annual rate, following sluggish growth of 2.2 percent in the first half. Consumer spending was the strongest component of GNP last year, while business fixed investment was weak. The extremely large trade deficit persisted in the third quarter and is now costing the United States about one percentage point of economic growth. Prices grew more slowly than in 1985. A moderate economic growth rate of about 3 percent is projected for 1987. Inflation is forecasted to be 4 percent.

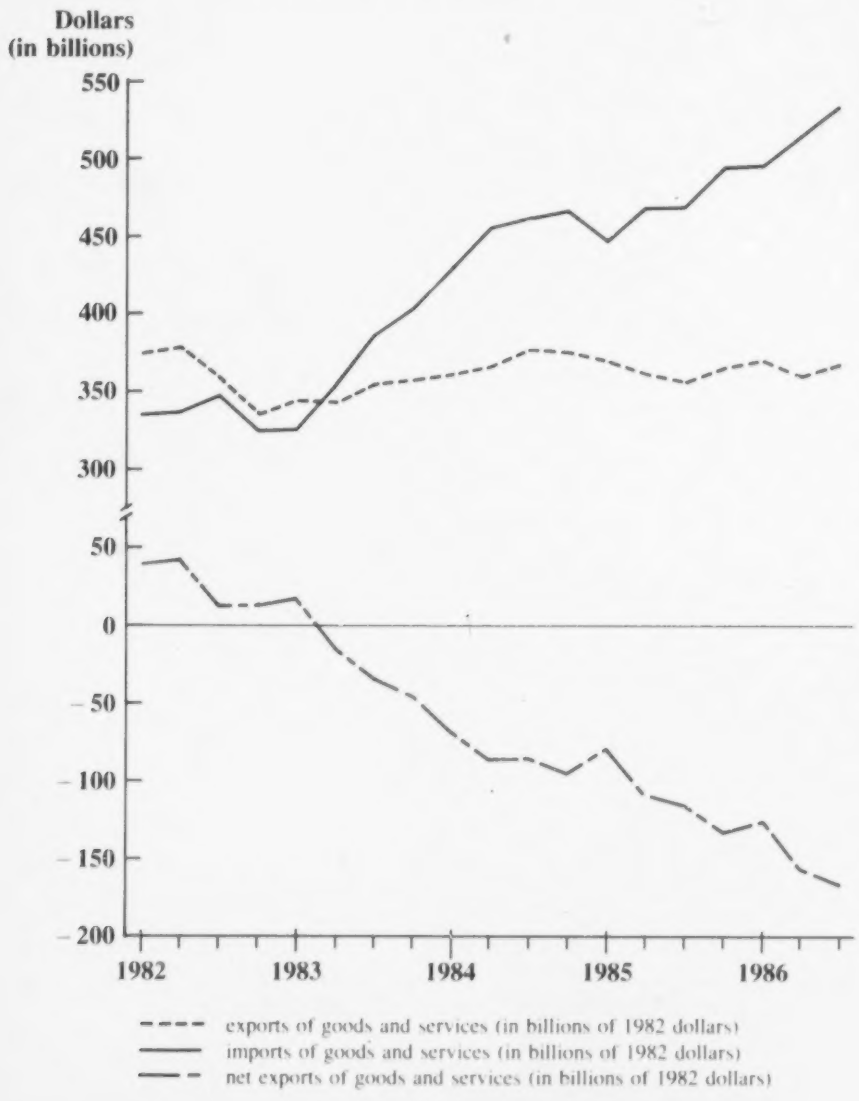
Recent Economic Developments

The consumer-expenditure component of real GNP, which is about two-thirds of the total, grew a brisk 6.5 percent (annual rate) in the third quarter. Most of the surge was due to strong automobile and truck sales. This followed a growth rate of about 5 percent in the first half.

Real gross business fixed investment, which is about one-sixth of GNP, grew much faster during the early years of this expansion than during the average postwar expansion. This was due to changes in tax laws and declines in the prices of investment goods relative to other goods. Growth slowed in 1985, however, and was very disappointing in 1986, with the weakness concentrated in the nonresidential structures component. The major cause of the slowdown was probably the tax reform debate, which led to uncertainty about where the incidence of promised increases in business taxation would fall. Weakness in world oil markets and the resulting decline in domestic oil extraction has been a factor. Many forecasters had anticipated that tougher tax treatment of depreciation in 1987 would lead to increased capital spending in 1986, but with manufacturing capacity utilization hovering at about 80 percent during the year, this has not occurred. Residential investment was robust last year, with third-quarter annualized growth of 9.7 percent.

Despite the more than a one-third decline in the trade-weighted value of the dollar from its peak in early 1985, the trade deficit remains large, as shown in Figure 1. Currently, net exports of goods and services amount to about 4 percent of GNP. However, recent data may indicate some improvement. Deficits in August and September were about $13-14 bil-

Figure 1
U.S. Exports and Imports of Goods and Services



Source: Survey of Current Business.

lion, down from the peak of $18 billion in July, and in October the deficit narrowed still further to $12 billion. These figures must be viewed somewhat cautiously, however. Monthly trade numbers are highly volatile and subject to major revisions. The U.S. trade deficit with Europe narrowed slightly in the third quarter, but has continued to widen against Japan and the newly industrialized Asian economies.

On the supply side, industrial production has declined about 1 percent since reaching its most recent peak last January. Weakness has been most dramatic in the energy sector. Services, which make up about one-half of total output, grew 6.8 percent in the third quarter after about 6 percent growth in the first half. These data support the concern that in the current expansion, the services sector has grown at the expense of the goods-producing sector. However, as shown in Table 1, relative to real GNP growth, services have grown more slowly and goods have grown more rapidly than in other postwar expansions.

As shown in Figure 2, total employment grew vigorously last year with total nonfarm payroll employment rising about 1.8 million to 100.7 million in October. Despite the rise in total employment numbers, the civilian unemployment level increased from 6.9 percent in December 1985 to 7.0 percent in October 1986. This reflects a rise in labor force participation.

Price growth was quite moderate last year. In the first three quarters, the consumer price index increased at an annual rate of 1.8 percent. Excluding energy prices, the CPI rose at 3.7 percent (annualized rate) in the first three quarters of 1986. The price of crude oil fell sharply on spot markets until summer, reaching a low of $7/barrel, compared with $30/barrel a year before. Since then oil prices have climbed, reaching about $15.50 by mid-November on expectations that OPEC might be able to bring about decreases in production. Commodity prices, as measured by the Raw Industrials Price Index, an index of 13 widely used, freely traded basic commodities, have surged since last spring. In the six months between May and October this index grew at almost 12 percent (annualized rate), indicating significant firming in raw materials' prices.

The outlook for a pickup in growth during the fourth quarter of 1986 is not promising. Slow growth in after-tax income and a sharp decline in automobile purchases, due to the end of low-cost financing, will probably lead to much lower growth in consumer purchases in the final quarter. However, increased consumption and investment spending to take advantage of the last quarter under the old tax law may have offset this. Recent economic data have been mixed. Positive gains in employment and net exports are offset by poor sales, income, and production numbers. Retail sales plummeted 5 percent in October as auto sales fell by almost 19 percent. This follows September's 5.3 percent rise and represents the first decline in seven months. Personal income registered only a 0.3 percent rise in September, about the same as in July and August. This is typical of the late stages of an expansion when employment gains are moderate. Industrial production was unchanged in October after a small 0.1 percent rise in September. Housing starts declined by

Table 1
Output of Goods and Services: Comparison of Current and Past Expansions

First Four Years After Expansion Beginning:	Percent Growth in Real GNP		
	Goods	Services	GNP
1954, Second Quarter	.0357	.1141	.0749
1961, First Quarter	.2103	.1829	.1929
1970, Fourth Quarter	.1383	.1448	.1266
1975, First Quarter	.2525	.1381	.2039
Average of Above	.1592	.1450	.1496
1982, Fourth Quarter	.2084	.1095	.1671

0.2 percent in October, the sixth consecutive monthly decline. Building permits, which are a good forecaster of future housing activity, fell 2.8 percent in October to their lowest level in two years.

The Outlook for 1987

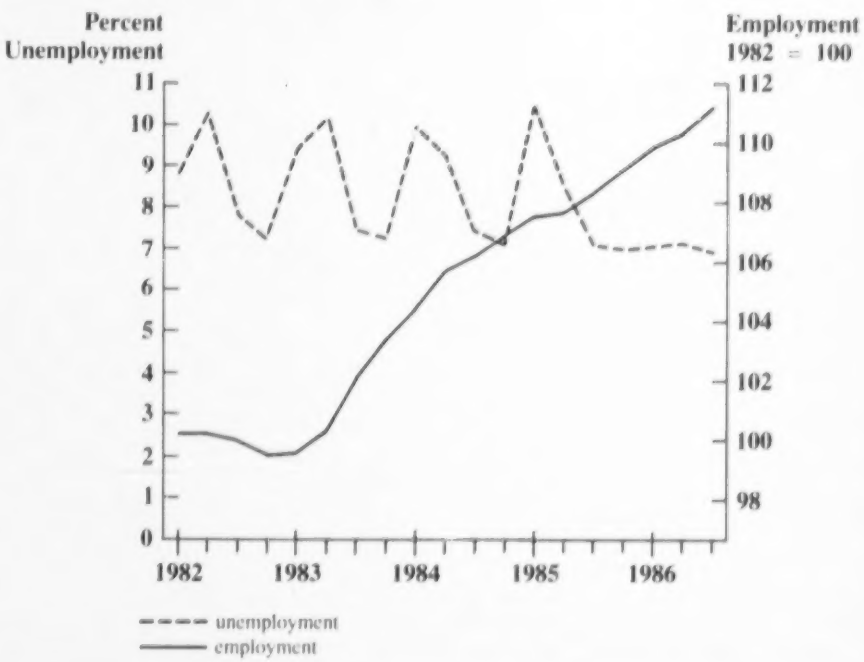
The outlook for 1987 will depend crucially on the U.S. budget deficit. The deficit has been linked to high U.S. real interest rates, the sharp rise of the dollar in the early 1980s and the U.S. current account deficit. Despite three years of congressional attempts to balance the budget, the deficit reached a record $221 billion in fiscal 1986. The growth in federal outlays did slow considerably due to lower inflation and declines in interest rates. However, slow economic growth and the first full-year impact of indexing the personal tax system caused the growth in federal revenues to shrink as well. A farm bill, contributing to a nearly 50 percent increase in farm subsidy payments, added an additional $5 billion to the deficit. Projections for fiscal 1987 and beyond show a shrinking budget gap. If the economy grows at about 3 percent, growth in spending is restrained, and tax reform generates the promised revenue, the budget deficit is projected to be about $180 billion. This figure is about $35 billion over the Gramm-Rudman target, but given the current political resistance to additional spending cuts or tax increases, the target will probably be increased.

The prognosis for reducing the U.S. trade deficit is not overwhelmingly favorable. The plunge of the dollar during the past two years seems to have had little impact upon U.S. net exports so far, but may help matters in 1987. It is possible that it may take years rather than quarters for a decline in the terms of trade to significantly affect the volume of exports and imports. Demand for U.S. exports depends on foreign income as well as exchange rates. With Western European and Japanese growth expected to be sluggish next year, the likelihood of restoring a more favorable trade balance is diminished. Import growth may continue to be a problem. Total import growth rose more than twice as fast in the third quarter of 1986 as it did between 1984 and 1985, in large part due to petroleum imports. If oil prices remain low, the growth of these imports may be sustained next year.

Perhaps the most significant macroeconomic event in the first half of 1986 was the plunge in crude oil prices. In the short run this had the harmful effect on the U.S. economy of leading to sharp cutbacks in oil exploration. In the longer run, however, lower oil prices should prove to be beneficial and should help lead to higher growth next year.

In many respects the U.S. economy appears to be in good shape. We are in the fourth year of a recovery that began in November 1982. The persistent and rising inflation of the late seventies and early eighties has been held in check and unemployment has declined. Problems remain, however. The unemployment rate is fairly high by postwar U.S. standards and the level of federal spending remains high. Federal outlays have grown

Figure 2
The Civilian Unemployment Rate and Nonagricultural Payroll Employment



from about 18 percent of GNP in 1965 to about 24 percent in 1986. Money supply growth has been high in 1986, which may result in upward pressure on prices in 1987.

U.S. growth is forecasted to be about 3 percent in 1987. Very weak growth in the first half is projected to be followed by a pickup in the second half. The slight pickup in growth should result from a buildup of inventories and some narrowing of the trade deficit. Growth in consumer spending is likely to weaken. Business fixed investment is projected to remain sluggish. The favorable effect of decreased uncertainty about future tax law changes will be offset by the less favorable treatment of depreciation and loss of investment incentives under the new tax law.

Inflation is forecasted to increase to a moderate 4 percent in 1987. The worsening will mainly result from an expected leveling of energy prices. Energy prices, which declined 22.6 percent (annualized rate) in the first three quarters of 1986, are expected to stabilize, although recent actions by Saudi Arabia have generated considerable uncertainty. Recent increases in money supply growth may also be a factor. The narrow monetary aggregate, M1, grew at rates well above the Federal Reserve's target range last year. The broader, and probably more significant aggregates, M2 and M3, have begun to close in on the tops of their target ranges.

Longer-term U.S. interest rates are projected to rise slightly in 1987. Increases in inflationary expectations and the inability of the federal government to make major reductions in its deficit will probably be the primary factors. The exchange rate is projected to stabilize. Weakness in the West European and Japanese economies should prevent further rapid declines. Upward pressure on U.S. interest rates should also play a role.

Anne C. Sibert
Assistant Professor of Economics
University of Kansas

Editor's Note: This outlook was written before fourth quarter data were released.

The Kansas Economy

Review

Total Kansas non-agricultural employment rose 1.52 percent between December 1985 and December 1986 (Table 1). The service and retail sectors had the largest employment gains, adding 14,700 new jobs over the period and offsetting Kansas employment losses totaling 6,500 in the mining, manufacturing, wholesale trade, and transportation and utilities sectors. The bulk of Kansas's employment loss took place, not surprisingly, in the mining sectors, where one consequence of plunging world oil prices was a loss of 4,100 jobs in the Kansas oil and gas extraction industry.

U.S. total non-agricultural employment grew 2.46 percent between December 1985 and December 1986, a somewhat higher rate than total Kansas growth. A comparison of U.S. and Kansas employment growth rates shows all U.S. sectors except government were either up by more or down by less than the corresponding Kansas sector. Government employment grew 2.8 percent in Kansas but only 1.9 percent nationally.

Kansas real personal income is also not growing as quickly as personal income for the U.S. as a whole. Kansas total real personal income is only up 0.90 percent from third quarter 1985 to third quarter 1986, compared with a 2.41 percent gain for the U.S. over the same period.

Sectors: Review and Outlook

Agriculture

U.S. wheat production during this marketing year, which began June 30, 1986, is expected to be the lowest since 1980, falling short of domestic and foreign demand for U.S. wheat for the first time since 1983 (Table 2). However, these production declines, even with the increased usage, are no match for the record surplus wheat stocks carried over from the last marketing year, which will make total 1986-1987 supply of wheat the second highest in history. With 1986-1987 U.S. wheat exports expected to be up only slightly from last year's low levels, we can expect ending stocks to approximate the 1985-1986 surplus.

Large supplies, uninspiring demand, and the 1986 $2.40/bushel Commodity Credit Corporation (CCC) loan rate should keep this marketing year's prices in the range of $2.20 to $2.40 per bushel, compared with a $3.16 per bushel average and a $3.30 per bushel CCC loan rate last marketing year. While 1985-1986 prices were the lowest in seven years, 1986-1987 prices may reach a 15-year low.[1]

Total crop and livestock cash receipts from farm marketings are expected to fall 1 to 3 percent in 1987, with livestock receipts increasing 1 to 3 percent and crop receipts decreasing by 5 to 7 percent. Net CCC loans are estimated to have accounted for 16 percent of crop receipts in 1986 and are expected to contribute the same percent in 1987.

Despite expected declines in crop prices and resulting declines in crop receipts, real 1987 net farm income is forecast to increase, and real net cash income is expected to be the highest since 1979 and about the same as in 1971 (Table 3). The strength in crop farm net cash income will derive from unprece-

Table 1
Non-Agricultural Employment
(thousands)

Sector	Kansas			U.S.		
	December 1985	December 1986	Percent Change	December 1985	December 1986	Percent Change
Total Non-Agricultural Employment	986.0	1,001.0	1.52	99,546	101,991	2.46
Mining	16.3	12.2	−25.15	24,894	24,854	−.16
Oil and Gas Extraction	14.8	10.7	−27.70	570	421	−26.15
Construction	40.4	40.6	.50	4,721	4,934	4.51
Manufacturing	173.2	172.3	−.52	19,272	19,182	−.47
Trans. Equipment	43.9	46.1	5.01	2,009	2,012	.17
Trans. and Utilities	65.5	65.0	−.76	5,307	5,389	1.55
Trade	251.6	256.5	1.95	24,016	24,649	2.64
Wholesale	66.4	65.4	−1.51	5,815	5,862	.81
Retail	185.2	191.1	3.19	18,201	18,787	3.22
FIRE	53.9	55.0	2.04	6,080	6,450	6.09
Services	188.4	197.2	4.67	22,389	23,468	4.82
Government	196.7	202.2	2.80	16,860	17,181	1.90

Source: Kansas Department of Human Resources and U.S. Bureau of Labor Statistics.

dented direct government payments and falling production expenses. Direct government payments, including certificates issued to satisfy diversion, disaster, deficiency, and conservation reserve obligations, are forecast to reach $15 billion in 1987, a 15 to 25 percent increase over last year's record payments.

Why are government outlays so high this year?

1) Market prices near or below the CCC loan rate are making participation in farm programs a virtual necessity for financial survival.
2) Lower loan rates, with target prices unchanged from 1985, are raising 1986 crop deficiency payment rates, resulting in record payments.
3) Increased demand for CCC loans implies increased forfeitures (defaults).
4) Increased forfeitures on CCC loans leave the CCC with rising inventory costs.
5) The introduction of new programs, such as the conservation reserve, has increased outlays.

Table 2
U.S. Supply and Utilization of Wheat
(in millions of bushels)

	Crop Year		
	1984-1985	1985-1986	1986-1987
Supply	**4,003**	**3,865**	**3,992**
Beginning Stocks	1,399	1,425	1,905
Production	2,595	2,425	2,077
Imports	9	15	10
Demand	**2,578**	**1,960**	**2,105**
Domestic	1,154	1,045	1,130
Exports	1,424	915	975
Ending Stocks	**1,425**	**1,905**	**1,887**
Average Farm Price Per Bushel	**$3.38**	**$3.16**	**$2.20-2.40**

Source: *Agricultural Outlook Economic Research Services*, U.S. Department of Agriculture, January-February 1987.

Yet even this record direct subsidy is not enough to offset the expected decline in cash receipts from farm marketings (which include CCC loan payments) by enough to create the expected increases in net cash income. Declining oil prices and feed grain prices, however, are causing production expenses to fall dramatically. Expenses fell an estimated 5 percent in 1986, the greatest annual percent decline since 1953. Total farm production expenses are forecast to fall another 3 percent in 1987. Contributing factors to the declines include:

1) Large and rapid decline in fuel prices;
2) Declines in fertilizer and chemical prices due to declines in petroleum prices;
3) Absence of price increases for most other inputs, such as machinery and building materials;
4) Lower market interest rates and lower outstanding debt; and
5) Lower feed prices, due to lower grain prices in general.

The increased net cash income, made possible by lower production expenses and higher government outlays, along with expected reductions in farm capital expenditures should allow the farm community to continue decreasing debt and perhaps even begin to acquire some stability.

Table 3
Forecasted U.S. Farm Income
(in billions of dollars)

	1986	1987
Gross Farm Income	158	157
Gross Cash Income	150	150
Farm Receipts	137	135
Crops	61	58
Livestock	71	72
Direct Government Payments	13	15
Non-money Income	10	9
Value of Inventory Change	– 3	– 3
Total Expenses	129	125
Cash Expenses	106	103
Net Cash Income	44	48
Net Farm Income	29	32
Net Farm Income in 1982 Dollars	25	27

Source: *Agricultural Outlook Economic Research Services*, U.S. Department of Agriculture, January-February 1987.

Figure 1
Military and Commercial Aircraft Manufacturing Employment Offsets Light-Plane Manufacturing Variations in Wichita

Source: Company figures as printed in the *Wichita Eagle-Beacon*, January 18, 1987.

Manufacturing

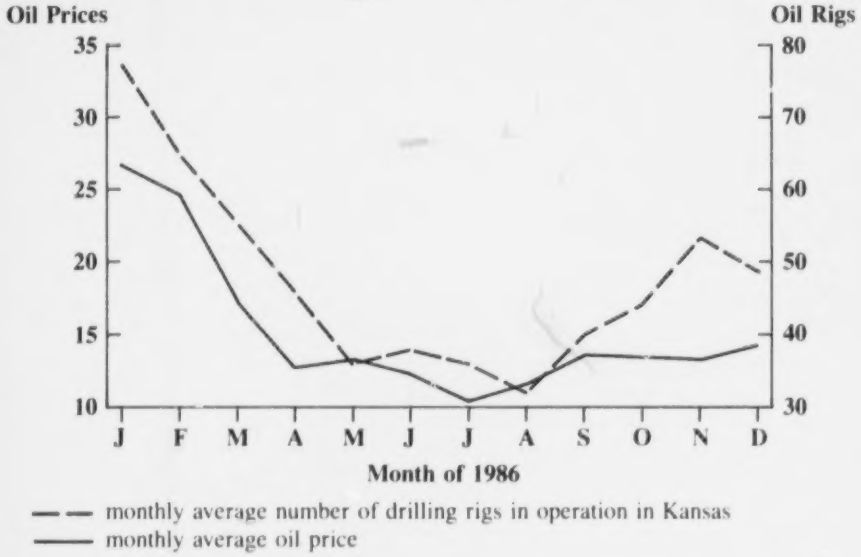
Performances of the various prominent manufacturing sub-sectors varied considerably, yet managed to largely offset each other. Total Kansas manufacturing employment for December 1986 was nearly unchanged from December 1985 levels, decreasing by only 0.54 percent.

Automobiles

The U.S. automobile industry experienced its fourth straight record-breaking year in 1986. Increases in real U.S. personal income translated to increased consumer spending, which included car purchases. Many 1986 car sales were also prompted by the heavy use of dealer incentives and the desire of purchasers to take advantage of the income tax deductions for interest and sales tax payments before tax law changes became effective in 1987. The Kansas auto industry operated at or near capacity levels during 1986.

Auto sales may decrease in 1987. U.S.

Figure 2
1986 Kansas Oil Exploration and Development Drops With Oil Prices



Source: Kansas Corporation Commission.

overall economic growth is expected to slow along with growth in disposable personal income. This slowdown should have a stifling effect on the growth of car sales. Also, tax law changes disallowing the deduction of interest and sales tax payments on consumer purchases will raise the effective price of cars for consumers.

Other aspects of the 1987 economic environment may offset some of the negative influences on the industry. If the Federal Reserve allows the money supply to grow to counteract the effective tax increases, interest rates will be lower, making credit financed car purchases easier. Another offsetting factor is the continuing devaluation of the dollar relative to the yen, which effectively raises the price of Japanese cars in the U.S. and makes some of the American manufacturers' most formidable competition relatively less attractive to consumers.

Aircraft

Last year's employment gains in the defense and commercial aircraft production sectors helped to offset employment losses in the general aviation sector (see Figure 1). Defense related aircraft production and employment levels continued to be high throughout 1986. Employment at Boeing Military Aircraft Corp. in Wichita is expected to remain at about 20,800 throughout the new year as defense spending begins to level off. Sales of commercial aircraft were also high in 1986. The light-plane manufacturing sector, however, had to contend with weak domestic demand and increasing foreign competition. Widespread corporate budget trimming contributed to lackluster domestic light-plane sales. The weakened dollar lent support to exports, but this was mostly offset by price-cutting in a highly competitive world market.

The light plane manufacturing industry is expected to remain under these pressures in 1987. Federal tax law changes will cause the effective price of light planes to increase, but will also give corporate purchasers incentives to buy this July rather than postpone needed purchases: The Tax Reform Act of 1986 generally repealed the investment tax credit but delayed the effective date to July 1, 1987 for buyers of small aircraft manufactured in Kansas, Georgia, Florida, and Texas.

Energy and Mining

The Kansas energy industry suffered a severe shock as world oil prices dropped dramatically during the first half of 1986. Oil exploration, development, and production levels fell tremendously in response to the nearly two-thirds decrease in oil prices (see Figure 2). The monthly average number of drilling rigs in operation in Kansas fell from 77 at the start of the year, just before the price dive, to 32 by August. After August, exploration and development picked up somewhat as there was a gradual and slight upturn in prices. By December, the number of Kansas drilling rigs in operation was averaging 51 for the week. For the first half of 1986, Kansas cumulative production of crude oil was 5 percent lower than for the same period in 1985. Employment in the Kansas oil and gas extraction subsectors dropped by approximately 4,100, 28 percent, from December 1985 to December 1986. This drop accounts entirely for the drop in the overall Kansas mining sector employment.

Oil prices are expected to be volatile in 1987, and uncertainty about future oil prices could prevent any rebound in exploration and development activity. The industry is pushing for tariffs on oil imports as a means of raising prices, but their success in this endeavor is a long shot.

Shirley Klenda Sicilian
Research Economist
Institute for Public Policy and Business Research

Note

[1] The Commodity Credit Corporation loans money to farmers, taking grain as collateral. The amount of money loaned, or price per bushel is set by the U.S. Secretary of Agriculture and creates a price floor for grain: If farmers cannot sell their grain for more than the value of their loan, they can simply forfeit the grain and keep the CCC loan money.

Economic Indicators

TABLE ONE: ECONOMIC INDICATORS

Comparison Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Quarterly,at annual rates, SA						
Kansas - Mil. $	3rd	34957	35212	33680	-0.72	3.79
United States - Bil.$	3rd	3501.67	3483.33	3323.27	0.53	5.37
B. Employment - Quarterly						
Kansas - Thou., NSA	3rd	1177.10	1179.20	1214.20	-0.18	-3.06
United States - Mil., SA	3rd	110.00	109.23	107.20	0.70	2.61
C. Unemployment Rate - Quarterly						
Kansas - % NSA	3rd	5.3	5.2	4.6		
United States - % SA	3rd	6.9	7.2	7.2		
D. Retail Sales - Monthly, at annual rates						
Kansas - Mil. $, NSA	SEP	1746.67	1710.00	1246.67	2.14	40.11
United States - Bil. $, SA	SEP	128.00	121.50	118.50	5.35	8.02
E. Consumer Price Index, CPI-U, All items - Monthly, SA						
Kansas City* - 1967 = 100	AUG	323.90	322.90	321.10	0.31	0.87
United States - 1967 = 100	SEP	329.30	328.20	323.70	0.34	1.73
Kansas Indicators						
F. New Incorporations - Quarterly, NSA						
For Profit - Number	3rd	326.33	362.67	398.00	-10.02	-18.01
G. Tax Revenue, Quarterly, NSA						
General Fund Tax Revenue - Mil. $	3rd	132.63	146.40	125.53	-9.40	5.66
H. Operating Expenditures, Quarterly, NSA						
General Fund Operating Expenditures - Mil. $	3rd	101.57	148.60	94.37	-31.65	7.63

NOTES: *The Kansas City CPI-U is published bimonthly starting with February.
National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not Seasonally Adjusted.
SA-Seasonally Adjusted.

SOURCE: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

TABLE TWO: NATIONAL INDICATORS
(Seasonally Adjusted)

General Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Income Measures - Quarterly, at annual rates						
Gross National Product - Bil. 82$	3rd	3687.30	3661.40	3603.80	0.71	2.32
Disposable Personal Income - Bil. 82$	3rd	2610.30	2625.80	2524.77	-0.59	3.39
Personal Consumption - Bil. 82$	3rd	2446.80	2408.40	2342.00	1.59	4.47
Gross Private Investment - Bil. 82$	3rd	674.80	687.30	657.40	-1.82	2.65
Net Export of Goods and Services - Bil. 82$	3rd	-163.60	-153.90	-113.80		
Government Purchases - Bil. 82$	3rd	756.00	742.20	731.80	1.86	3.31
Savings Rate - %	3rd	3.27	4.97	4.33		
B. Labor Force - Monthly						
Civilian Labor Force - Mil.	SEP	118.20	118.20	115.80	0.00	2.07
Employed - Mil.	SEP	109.90	110.20	107.50	-0.27	2.23
Unemployed - Mil.	SEP	8.30	8.00	8.30	3.75	0.00
Unemployment Rates - percent						
All -	SEP	7.00	6.80	7.10		
Women -	SEP	7.10	6.80	7.50		
Men -	SEP	7.00	6.80	6.90		
Teens -	SEP	18.70	17.70	18.10		
Blacks and other than white -	SEP	13.30	13.10	13.70		
Whites -	SEP	6.00	5.80	6.10		
C. General Business - Quarterly						
Industrial Production - 1977 = 100	3rd	125.07	124.37	124.03	0.56	0.83
Mfg. and Trade Sales - Bil. 82$	3rd	429.10	420.57	413.17	2.03	3.86
Mfg. and Trade Inventories - Bil. 82$	3rd	648.00	646.50	636.07	0.23	1.88
New Orders, Durable Goods - Bil. 82$	3rd	98.77	96.03	99.57	2.85	-0.80
Capacity Utilization, Mfg. %	3rd	79.90	79.50	80.10		
New Housing Starts, Private - Tho.	3rd	1743.00	1908.00	1687.67	-8.65	3.28
D. Prices - Monthly						
Consumer Prices - 1967 = 1009						
CPI-U, All Items	SEP	329.30	328.00	323.70	0.40	1.73
Food	SEP	323.90	322.50	310.70	0.43	4.25
Housing	SEP	361.90	361.10	352.20	0.22	2.75
Apparel	SEP	209.40	207.70	206.80	0.82	1.26
Transportation	SEP	302.00	300.80	319.30	0.40	-5.42
Medical	SEP	440.10	437.40	409.00	0.62	7.60
Producer Prices - 1967 = 100 (NSA)						
All Commodities	SEP	297.70	297.20	305.90	0.17	-2.68
Industrial Commodities	SEP	308.80	307.70	322.20	0.36	-4.16
Crude Materials	SEP	275.50	275.50	296.80	0.00	-7.18
Capital Equipment	SEP	304.20	306.30	296.30	-0.69	2.67
Agricultural Prices - 1977 = 100						
Prices Received	SEP	122.00	125.00	120.00	-2.40	1.67
Prices Paid	SEP	161.00	161.00	162.00	0.00	-0.62
E. Monetary and Credit Aggregates - Quarterly						
(Annual rates of change, seasonally adjusted in percent.)						
Total Reserves -	3rd	22.90	17.80	15.70		
M1	3rd	17.40	15.80	14.50		
Commercial Banks:						
Savings -	3rd	25.50	11.80	7.60		
Small Denomination Time -	3rd	-9.00	-3.10	3.30		
Large Denomination Time -	3rd	-3.00	-8.80	-3.60		
Thrift Institutions:						
Savings -	3rd	23.00	20.90	12.90		
Large Denomination Time -	3rd	2.40	11.00	-1.00		
Debt Components:						
Federal -	3rd	N.A.	11.50	14.60		
Nonfederal -	3rd	N.A.	9.20	12.40		
Interest Rates - Monthly						
Prime Rate - %	SEP	7.50	7.90	9.50		
Discount Rate - %	SEP	5.50	5.80	7.50		

SOURCES: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

TABLE THREE: EMPLOYMENT IN KANSAS

Category		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. General Indicators - Quarterly						
Civilian Labor Force - Tho.	3rd	1242.53	1243.77	1272.03	-0.10	-2.32
Employed - Tho.	3rd	1177.10	1179.20	1214.20	-0.18	-3.06
Farm Employment - Tho.	3rd	74.17	69.37	67.23	6.92	10.31
Unemployed Tho.	3rd	65.43	64.67	57.83	1.19	13.14
Initial Claims for Unemployment Insurance - Tho.	3rd	13.16	13.38	13.31	-1.61	-1.09
Average Work Week, Mfg. - Hrs.	3rd	40.13	40.37	39.90	-0.58	0.58
B. Industry Employment - Quarterly, in thousands						
All Industries -	3rd	990.43	994.00	979.53	-0.36	1.11
Manufacturing -	3rd	175.37	176.27	176.67	-0.51	-0.74
Durable Goods -	3rd	104.67	104.90	103.93	-0.22	0.71
Fabricated Metal Production -	3rd	11.87	11.70	12.23	1.42	-3.00
Machinery (incl. Elec.) -	3rd	25.97	26.43	25.77	-1.77	0.78
Transport. Equip. -	3rd	45.30	45.17	44.17	0.30	2.57
Nondurable Goods -	3rd	70.70	71.37	72.73	-0.93	-2.80
Food and Kindred Prod. -	3rd	26.53	26.17	27.27	1.40	-2.69
Meat Products -	3rd	13.00	12.80	13.97	1.56	-6.92
Printing and Publishing -	3rd	17.57	18.20	17.67	-3.48	-0.57
Petroleum and Coal -	3rd	3.07	2.93	3.20	4.55	-4.17
Mining -	3rd	11.33	12.40	17.07	-8.60	-33.59
Oil and Gas Extraction -	3rd	9.67	10.73	15.33	-9.94	-36.96
Contract Construction -	3rd	47.40	44.13	46.80	7.40	1.28
Trans. and Public Utilities -	3rd	64.27	64.30	63.87	-0.05	0.63
Wholesale Trade -	3rd	66.23	66.77	67.43	-0.80	-1.78
Retail Trade -	3rd	184.83	181.57	181.37	1.80	1.91
Finance, Ins., and Real Estate -	3rd	55.07	54.53	53.07	0.98	3.77
Services	3rd	195.90	194.53	194.03	0.70	0.96
Federal Government -	3rd	28.43	28.27	27.33	0.59	4.02
State and Local Government -	3rd	161.57	171.20	151.90	-5.63	6.36

SOURCES: BLS, Ks. Dept. of Human Resources.

TABLE FOUR: KANSAS RETAIL SALES SUBJECT TO SALES TAX
(At Annual Rates)

Account		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Business Classification - Quarterly, in Millions						
Apparel -	3rd	41.41	35.59	35.01	16.35	18.27
Automotive -	3rd	318.10	257.56	277.21	23.50	14.75
Food -	3rd	405.37	329.03	334.41	23.20	21.22
Furniture -	3rd	79.91	65.96	69.17	21.16	15.54
General Merchandise -	3rd	228.02	215.55	186.34	5.79	22.37
Lumber and Building Materials -	3rd	129.97	101.71	111.66	27.78	16.39
Prof. and Pers. Service -	3rd	86.49	74.31	75.44	16.40	14.66
Public Utilities -	3rd	84.86	64.10	63.77	32.39	33.08
Unclassified -	3rd	134.50	121.72	119.28	10.50	12.77
Farm and Garden Products -	3rd	1.56	1.35	1.24	15.69	25.76
Manufacturing and Trading -	3rd	96.20	82.83	93.35	16.15	3.05
Miscellaneous -	3rd	5.23	7.93	5.88	-34.09	-11.13
Total -	3rd	1611.24	1357.64	1372.75	18.68	17.37

NOTE: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

SOURCES: Ks. Dept. of Revenue.

TABLE FIVE: INCOME IN KANSAS
(Seasonally Adjusted, at Annual Rates)

Account		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Quarterly						
Total - Mil. $	3rd	34957	35212	33680	-0.72	3.79
Nonfarm Income - Mil. $	3rd	34155	33804	32856	1.04	3.95
Farm Income - Mil. $	3rd	802	1409	824	-43.08	-2.67
Average Weekly Earnings, Mfg.* - $	3rd	391.05	387.53	378.41	0.91	3.34
B. Earnings by Industry - Quarterly, in Millions						
Nonfarm -	3rd	23806	23379	22592	1.83	5.37
Farm -	3rd	802	1409	824	-43.08	-2.67
Manufacturing -	3rd	4733	4714	4647	0.40	1.85
Durable Goods -	3rd	2960	2930	2920	1.02	1.37
Nondurable Goods -	3rd	1773	1784	1726	-0.62	2.72
Mining -	3rd	322	353	482	-8.78	-33.20
Contract Construction -	3rd	1676	1601	1469	4.68	14.09
Trans. and Public Utilities -	3rd	2182	2138	2061	2.06	5.87
Wholesale Trade -	3rd	1720	1724	1706	-0.23	0.82
Retail Trade -	3rd	2414	2365	2317	2.07	4.19
Finance, Ins., and Real Estate -	3rd	1447	1406	1336	2.92	8.31
Services -	3rd	4408	4706	4484	-6.33	-1.69
Federal Government -	3rd	730	718	693	1.67	5.34
State and Local Government -	3rd	3073	2920	2703	5.24	13.69

NOTE: *Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SIX: KANSAS AGRICULTURAL INDICATORS

Item		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Prices Received - Monthly						
All Farm Products - 1977 = 100	SEP	135	136	133	-0.74	1.50
All Crops - 1977 = 100	SEP	91	98	120	-7.14	-24.17
Wheat - $/Bu.	SEP	2.14	2.14	2.77	0.00	-22.74
Sorghum Grain - $/Cwt.	SEP	2.28	2.61	3.40	-12.64	-32.94
Corn - $/Bu.	SEP	1.52	2.06	2.30	-26.21	-33.91
Soybeans - $/Bu.	SEP	4.60	4.94	4.73	-6.88	-2.75
All Hay - $/Ton	SEP	48.00	46.00	49.00	4.35	-2.04
Livestock and Products - 1977 = 100	SEP	162	160	142	1.25	14.08
All Beef Cattle - $/Cwt.	SEP	58.70	57.40	52.60	2.26	11.60
Steers and Heifers - $/Cwt.	SEP	59.60	58.40	53.20	2.05	12.03
Calves - $/Cwt.	SEP	65.60	64.10	60.80	2.34	7.89
Hogs - $/Cwt.	SEP	56.70	61.10	38.20	-7.20	48.43
Milk - $/Cwt.	SEP	13.00	12.50	12.90	4.00	0.78

SOURCE: Ks. Crop and Livestock Reporting Service.

NOTE: *Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SEVEN: EMPLOYMENT AND SALES FOR SMSAs AND COUNTIES

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Wichita SMSA - Quarterly						
Civilian Labor Force - Tho.	3rd	225.30	226.37	240.73	-0.47	-6.41
Employed - Tho.	3rd	211.63	213.43	227.83	-0.84	-7.11
Unemployed - Tho.	3rd	13.63	12.93	12.87	5.41	5.96
Rate - %	3rd	6.03	5.70	5.37		
Retail Sales - Mil. $	3rd	318.31	262.08	275.76	21.46	15.43
B. Kansas Portion of Kansas City SMSA - Quarterly						
Civilian Labor Force - Tho.	3rd	302.10	298.40	280.47	1.24	7.71
Employed - Tho.	3rd	290.57	287.00	269.40	1.24	7.86
Unemployed - Tho.	3rd	11.53	11.43	11.07	0.87	4.22
Rate - %	3rd	3.83	3.80	3.93		
Retail Sales - Mil. $	3rd	368.72	303.89	291.11	21.34	26.66
C. Topeka SMSA - Quarterly						
Civilian Labor Force - Tho.	3rd	87.13	86.57	89.03	0.65	-2.13
Employed - Tho.	3rd	82.87	82.43	84.90	0.53	-2.39
Unemployed - Tho.	3rd	4.27	4.17	4.10	2.40	4.07
Rate - %	3rd	4.90	4.77	4.60		
Retail Sales - Mil. $	3rd	117.82	96.85	102.00	21.64	15.51
D. Lawrence SMSA - Quarterly						
Civilian Labor Force - Tho.	3rd	37.10	37.30	36.53	-0.54	1.55
Employed - Tho.	3rd	35.63	35.90	35.23	-0.74	1.14
Unemployed - Tho.	3rd	1.40	1.40	1.30	0.00	7.69
Rate - %	3rd	3.80	3.80	3.63		
Retail Sales - Mil. $	3rd	39.44	32.38	32.45	21.78	21.54
E. Riley County--Manhattan Area - Quarterly						
Civilian Labor Force - Tho.	3rd	26.17	27.20	23.07	-3.80	13.44
Employed - Tho.	3rd	25.37	26.63	22.30	-4.76	13.75
Unemployed - Tho.	3rd	0.80	0.80	0.77	0.00	4.35
Rate - %	3rd	3.07	3.00	3.43		
Retail Sales - Mil. $	3rd	22.06	17.18	18.03	28.39	22.30
F. Reno County--Hutchinson Area - Quarterly						
Civilian Labor Force - Tho.	3rd	32.33	32.60	33.27	-0.82	-2.81
Employed - Tho.	3rd	29.77	29.80	31.37	-0.11	-5.10
Unemployed - Tho.	3rd	2.53	2.80	1.90	-9.52	33.33
Rate - %	3rd	7.83	8.63	5.80		
Retail Sales - Mil. $	3rd	38.95	33.70	37.66	15.57	3.40
G. Crawford County--Pittsburg Area - Quarterly						
Civilian Labor Force - Tho.	3rd	16.73	16.90	17.17	-0.99	-2.52
Employed - Tho.	3rd	15.63	15.83	16.23	-1.26	-3.70
Unemployed - Tho.	3rd	1.10	1.07	0.93	3.13	17.86
Rate - %	3rd	6.57	6.27	5.43		
Retail Sales - Mil. $	3rd	15.82	14.42	14.17	9.73	11.68
H. Lyon County--Emporia Area - Quarterly						
Civilian Labor Force - Tho.	3rd	19.03	19.17	19.23	-0.70	-1.04
Employed - Tho.	3rd	17.97	18.03	18.37	-0.37	-2.18
Unemployed - Tho.	3rd	1.07	1.10	0.87	-3.03	23.08
Rate - %	3rd	5.57	5.90	4.53		
Retail Sales - Mil. $	3rd	19.36	15.90	16.78	21.75	15.37
I. Saline County--Salina Area - Quarterly						
Civilian Labor Force - Tho.	3rd	26.03	25.83	27.67	0.77	-5.90
Employed - Tho.	3rd	24.50	24.30	26.03	0.82	-5.89
Unemployed - Tho.	3rd	1.53	1.53	1.60	0.00	-4.17
Rate - %	3rd	5.87	5.90	5.87		
Retail Sales - Mil. $	3rd	38.04	30.74	31.18	23.76	22.02
J. Barton County--Great Bend Area - Quarterly						
Civilian Labor Force - Tho.	3rd	17.57	17.33	19.97	1.35	-12.02
Employed - Tho.	3rd	15.60	15.60	19.03	0.00	-18.04
Unemployed - Tho.	3rd	1.97	1.73	0.93	13.46	110.71
Rate - %	3rd	11.03	9.97	4.60		
Retail Sales - Mil. $	3rd	21.35	19.46	25.07	9.69	-14.87
K. Montgomery County--Coffeyville Area - Quarterly						
Civilian Labor Force - Tho.	3rd	17.33	17.37	19.37	-0.19	-10.50
Employed - Tho.	3rd	16.00	16.00	18.13	0.00	-11.76
Unemployed - Tho.	3rd	1.33	1.37	1.23	-2.44	8.11
Rate - %	3rd	7.77	7.80	6.33		
Retail Sales - Mil. $	3rd	19.67	17.19	16.99	14.45	15.74

SOURCE: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

TABLE EIGHT: BANKING ACTIVITY IN KANSAS*

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Federal Reserve Member Banks						
Kansas - Quarterly, in Millions						
Total Deposits -	3rd	30081.0	30490.7	28319.0	-1.34	6.22
Total Checkable -	3rd	5398.3	5379.7	5143.0	0.35	4.96
Demand Deposits -	3rd	2978.0	2960.0	2967.0	0.61	0.37
Other Checkable -	3rd	2420.3	2419.7	2174.3	0.03	11.31
Small Time and Savings -	3rd	20571.7	20902.7	19298.7	-1.58	6.60
Large Time -	3rd	4134.3	4208.3	3880.7	-1.76	6.54
Kansas City, KS - Quarterly, in Millions						
Total Loans -	3rd	536.50	514.23	462.50	4.33	16.00
Real Estate -	3rd	178.77	151.30	129.57	18.15	37.97
Commercial and Industrial -	3rd	173.67	177.90	144.47	-2.38	20.21
Consumer -	3rd	50.10	48.27	46.17	3.80	8.52
Total Deposits -	3rd	597.33	573.80	497.83	4.10	19.99
Demand Deposits -	3rd	110.50	109.17	99.63	1.22	10.91
Time and Savings -	3rd	306.43	284.33	219.40	7.77	39.67
Topeka - Quarterly, in Millions						
Total Loans -	3rd	333.07	336.07	371.23	-0.89	-10.28
Real Estate -	3rd	85.13	88.77	94.70	-4.09	-10.10
Commercial and Industrial -	3rd	126.67	127.03	147.40	-0.29	-14.07
Consumer -	3rd	51.77	53.17	61.00	-2.63	-15.14
Total Deposits -	3rd	521.03	510.40	522.17	2.08	-0.22
Demand Deposits -	3rd	154.07	144.53	150.57	6.60	2.32
Time and Savings -	3rd	242.70	245.83	232.33	-1.27	4.46
Wichita - Quarterly, in Millions						
Total Loans -	3rd	1192.07	1214.70	985.23	-1.86	20.99
Real Estate -	3rd	200.20	193.27	147.70	3.59	35.55
Commercial and Industrial -	3rd	509.60	540.67	472.97	-5.75	7.75
Consumer -	3rd	323.10	319.03	226.50	1.27	42.65
Total Deposits -	3rd	1805.03	1834.63	1724.53	-1.61	4.67
Demand Deposits -	3rd	445.13	445.93	444.80	-0.04	0.21
Time and Savings -	3rd	863.90	857.87	795.67	0.70	8.58

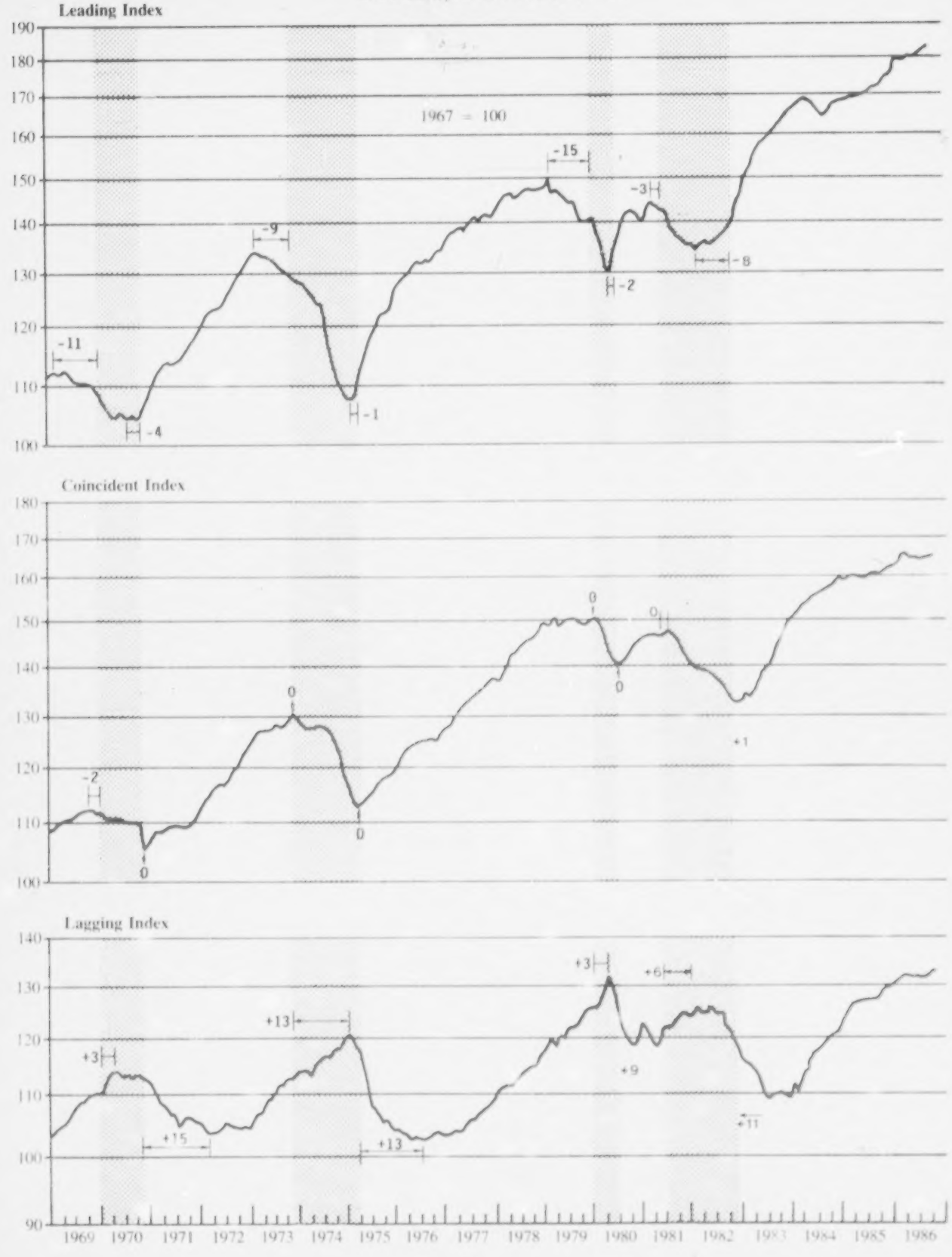
SOURCE: Federal Reserve Bank of Kansas City.
* Figures for all commercial banks are no longer provided by the Federal Reserve Bank of Kansas City. It should be noted, therefore, that the data above pertain only to Federal Reserve member banks of Kansas and do not represent all commercial banking in the state. Since 1980, these data have covered approximately 50 percent

TABLE NINE: SAVINGS AND LOAN ACTIVITY IN KANSAS

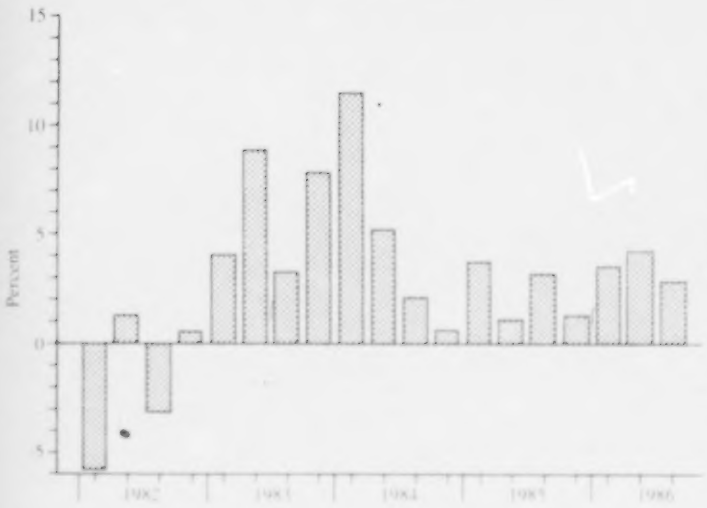
Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Kansas - Quarterly, in Millions						
Total Assets -	3rd	16300.0	16148.6	13821.8	0.94	17.93
Mortgage Loans -	3rd	12873.8	12967.0	11362.0	-0.72	13.31
B. Kansas City, KS - Quarterly, in Millions						
Total Assets -	3rd	1965.60	1931.93	1737.57	1.74	13.12
Mortgage Loans -	3rd	1550.47	1530.20	1376.20	1.32	12.66
C. Topeka - Quarterly, in Millions						
Total Assets -	3rd	2924.93	2987.00	2688.80	-2.08	8.78
Mortgage Loans -	3rd	2319.43	2318.63	2203.93	0.03	5.24
D. Wichita - Quarterly, in Millions						
Total Assets -	3rd	2207.60	2228.47	2257.70	-0.94	-2.22
Mortgage Loans -	3rd	1660.97	1659.53	1750.23	0.09	-5.10

SOURCE: Federal Home Loan Bank of Topeka.

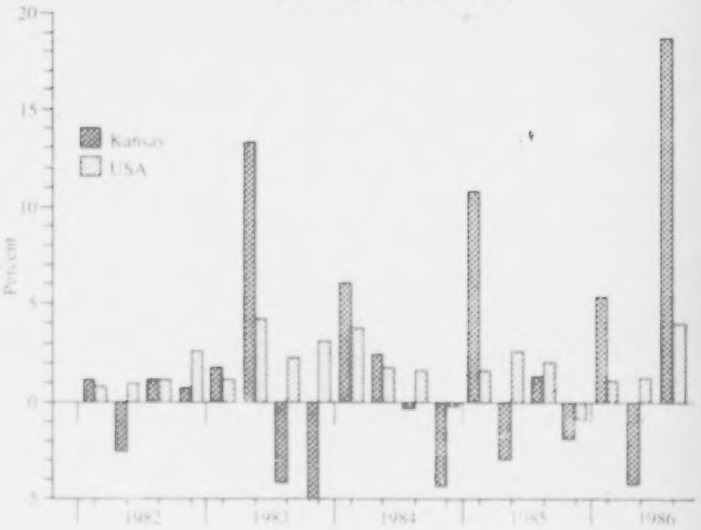
COMPOSITE INDEXES



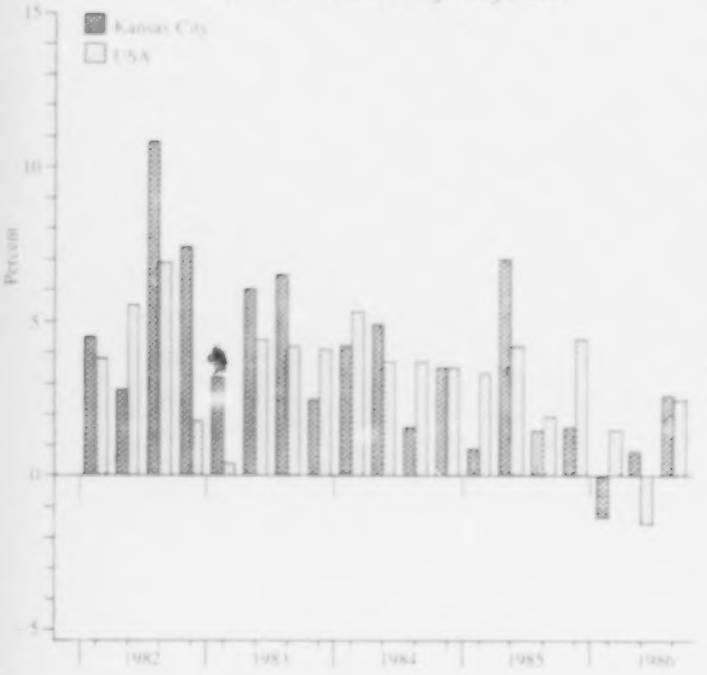
AVERAGE ANNUAL GROWTH RATE OF GNP
(1982 Dollars)



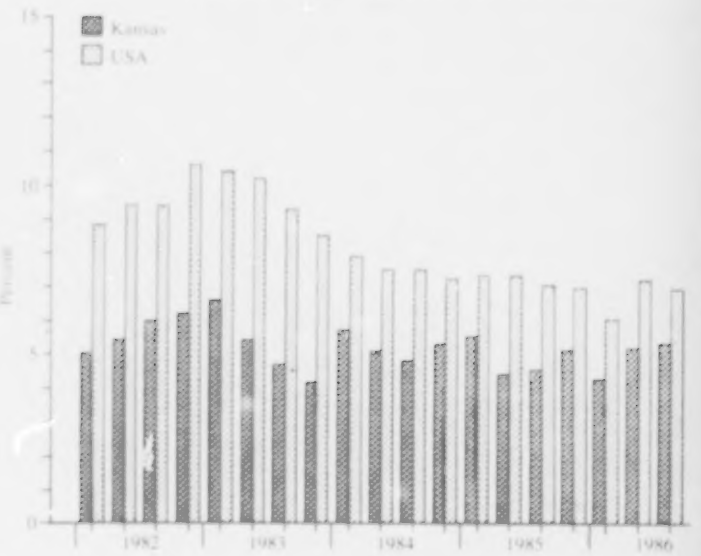
GROWTH OF RETAIL SALES
(In Current Dollars)



RATE OF INFLATION
(CPI-U, Seasonally Adjusted)



CIVILIAN UNEMPLOYMENT RATE



The University of Kansas
Kansas Business Review
Vol. 10, No. 2
Winter 1986-1987

Published quarterly by The University of Kansas
The Institute for Public Policy and Business Research
Lawrence, Kansas 66045

Nonprofit Organization
U.S. Postage
PAID
Lawrence, Kansas
Permit No. 65

CONGRESSIONAL INFO SERV/SRI
4520 EAST-WEST HI-WAY #800
WASHINGTON, DC 20014

Vol. 10, No. 3
Spring 1987

KANSAS BUSINESS REVIEW

In this issue:

The Kansas Brain Drain Revisited: The Case of College Students and Young Workers
David Burress

The Kansas Revenue Shortfall
Darwin Daicoff

A Logical Approach to Sales Tax on Services
C. David Newbery
Loran B. Smith

Managers' Evaluation of the Western Kansas Business Climate
Abbas Ali
Robert Camp
Douglas Kern

Cost and Benefits of Kansas Business Tax Incentives
Shirley Klenda Sicilian

Economic Conditions
Economic Indicators

The Institute for Public Policy and Business Research, The University of Kansas

KANSAS BUSINESS REVIEW

Vol. 10, No. 3
Spring 1987

In This Issue

	Page
The Kansas Brain Drain Revisited: The Case of College Students and Young Workers David Burress	1
The Kansas Revenue Shortfall Darwin Daicoff	5
A Logical Approach to Sales Tax on Services C. David Newbery Loran B. Smith	8
Managers' Evaluation of the Western Kansas Business Climate Abbas Ali Robert C. Camp Douglas Kern	11
Costs and Benefits of Kansas Business Tax Incentives Shirley Klenda Sicilian	15
Economic Conditions	
The National Review	21
The Kansas Economy	24
Economic Indicators	27

Advisory Board of the Institute for Public Policy and Business Research—Mr. Edward Brasky, President, Kansas Chamber of Commerce and Industry; Mr. Harland Priddle, Secretary of Commerce; Acting Executive Vice Chancellor Delbert M. Shankel; Vice Chancellor Frances Horowitz; Professor Anthony Redwood, Director, Institute for Public Policy and Business Research; Dean John O. Tollefson, School of Business; Professor Joseph Sicilian, Chairman, Department of Economics.

Editorial Board—Professor Anthony Redwood, Executive Director; Professor Charles Krider, Director of Business Research; Mohamed El Hodiri, Director of Economic Research; Carolyn Coleman, Editor; Dr. Gary R. Albrecht, Research Economist.

Kansas Business Review (*KBR*), ISSN 0164-8632, is published four times a year. *KBR* is published by the Institute for Public Policy and Business Research, 607 Blake Hall, The University of Kansas, Lawrence, Kansas 66045. The journal is designed by Laura Kriegstrom-Pojacsky of IPPBR.

Manuscripts for publication in the *Kansas Business Review* are solicited from readers and should be sent to the editors for consideration.

Opinions expressed in the articles are those of the author(s) and do not necessarily reflect those of the University of Kansas.

The purpose of the *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the field of economics and business that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes original manuscripts, studies, and research notes from academicians and other persons in any area of economics, business, and business administration. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double-spaced, and submitted in triplicate. In general, length should not exceed three thousand words. Authors are reminded of the combined scholarly-practitioner orientation of the *Kansas Business Review*, which necessitates the contents being in a form readable by that audience. Accordingly, complex statistical material—when necessary for inclusion—should be included in appendix form.

Submit manuscripts to: Editor, *Kansas Business Review*, The Institute for Public Policy and Business Research, 607 Blake Hall, The University of Kansas, Lawrence, Kansas 66045.

The Kansas Brain Drain Revisited: The Case of College Students and Young Workers

David Burress

Dr. Burress is a research economist at the Institute for Public Policy and Business Research.

In a previous issue of this review, Steve Thomas reported some results of his study of the out-migration of new engineering graduates from Kansas.[1] To me, his most interesting result was that 47 percent of engineering students who were native Kansans and who graduated from the University of Kansas during 1978 through 1983 had moved out of state as of spring 1984.[2] His study was published about the same time as a series of articles in the *Wichita Eagle-Beacon* reporting on the loss of National Merit semifinalists from Kansas.[3] The *Eagle-Beacon* study found that 58 percent of Kansans who were semifinalists during 1970 through 1980 and who could be located in late 1985 had moved out of state. Both results seemed to imply that Kansas has a serious brain drain, that is, a problem of net out-migrating human capital.

A Loophole in the Brain Drain Evidence

Both studies were seriously limited by a lack of information on the in-migration of human capital. They did not present statistics to show the number of engineers and semifinalists who are moving into Kansas from other states. If the rate of inflow equals the rate of outflow, then there may be no brain drain problem at all.[4]

This article provides some comparisons that will cast light on the extent of the *net* brain drain in Kansas. While these comparisons are not absolutely definitive, they do support some conclusions: The Kansas brain-drain problem is real, but it is much smaller than the gross outflow statistics implied.

This article consists of two parts. The present part uses a highly reliable data source, the 1980 U.S. Census, to evaluate the extent of the Kansas brain drain during 1975-1980. In the second part, to be presented in the next issue of this review, I will consider whether the rate of loss has changed in the 1980s, and I will estimate "brain drain" net rates corresponding to the gross rates given in the two prior studies.

A Well-Balanced Data Source

1980 census respondents were asked what state they had resided in five years previously; the results were analyzed extensively in the Bureau of the Census publication *Geographical Mobility for States and the Nation*. Using these data, we can form a series of well-balanced comparisons that answer two important questions: During 1975-1980, were educated Kansans more likely to move away than their counterparts in other states? During 1975-1980, were educated persons more likely to move into Kansas, or out?

These data show that more persons moved from Kansas to other states than in the reverse direction between 1975 and 1980. Moreover, the net outward flow of persons generally increased with education and with earning power. The net flow, however, was relatively small in comparison to the gross flows of in-migrants and of out-migrants. It was even smaller compared with the total number of persons residing in Kansas in each category. These conclusions are supported below.

Out-migration in Kansas and the Nation

We begin with the gross migration figures. Between 1980 and 1975 Kansas gained 275,485 people from out of state[5] and lost 288,142 to other states.[6] The net outflow was 12,657 persons, or 0.6 percent of the 1975 population. Viewed another way, the net outflow was only 4.4 percent of the gross outflow. There was a net loss of persons to other states during 1975-1980, but the loss was quite small in comparison either with total population or with gross flows.

Economists, however, believe that this net out-migration implies that the Kansas economy was doing worse than the nation as a whole during 1975-1980. It has been pointed out previously in this review that this pattern of net outflow has a long history in Kansas.[7]

Kansas gross in-migration was 12.6 percent and out-migration was 13.2 per-

The Kansas brain-drain problem is real, but it is much smaller than the gross outflow statistics implied.

These data show that more persons moved from Kansas to other states than in the reverse direction between 1975 and 1980. Moreover, the net outward flow of persons generally increased with education and with earning power.

cent. For the United States as a whole, 9.7 percent of 1980 residents had lived in a different state in 1975: Kansas residents were somewhat more likely than average to move across state lines, in both directions. That result is consistent with the fact that Kansas has a smaller-than-average state population. In general, people who move are more likely to cross a state line if they live in a small state than if they live in a large one. It presumably reflects the facts that people who move do so mainly to fill vacant jobs and that there are more vacant jobs where there are more people. The relatively high rates of gross migration to and from Kansas give us no information about the health of the Kansas economy; only the net rate matters.

The preceding data omit the numbers of persons who moved from or to foreign countries. Between 1975 and 1980 Kansas was less successful than the nation as a whole in attracting foreigners. The 1980 Kansas population included 30,483 persons who had lived abroad in 1975—about 1.4 percent of the population.[8] The comparable rate for the United States as a whole is 1.9 percent.[9] Unfortunately, the net flow rate of foreigners is unknown because there are no corresponding data on U.S. and Kansas residents who moved abroad between 1975 and 1980. For this reason, I will not consider foreigners as fully as the subject deserves in the following discussion.

College Students

The two Kansas brain drain studies were concerned with the outflow of persons with more education and earning power than average and who were young, with a working career ahead of them. Census data show that in 1980, 27,648 Kansans over 21 who were in college in 1975 moved here from another state, while 34,984 of the 1975 Kansas college students have moved away. Over five years Kansas suffered a net loss of 7 percent of the people who were college students in 1975.[10] The net outflow rate for college students is substantially worse than the comparable net flow rate for the Kansas population as a whole: We lost 0.6 percent of our population and 7 percent of our college-educated young people. Clearly, Kansas was a significant net exporter of former college students during 1975-1980.

The economic significance of this fact, however, needs further exploration. Were the exported students mainly native Kansans? Or were they mainly students who moved here to get a college degree, and then left? It is important to realize that out-of-state and foreign students who study in Kansas and then leave may have a positive economic impact on the state. Their relatives send them money, and they bring in some of their own savings. They spend some of this imported money on goods and services in Kansas, and there is a multiplier effect from their spending. The economic impact of these students well deserves a separate study.[11]

In any event, it is interesting to know whether the net outflow of former college students represents a real net loss of Kansans, or perhaps merely a reverse flow from a net inflow of students who had crossed state lines in order to attend college. As Table 1 shows, in 1980 the number of college students shipped in from other states exceeded the number of Kansans who went out-of-state. The net inflow of college students amounted to 2.3 percent of Kansan college students everywhere in 1980.

Moreover, it seems likely that much of the remaining unexplained outflow consists, not of native Kansans, but of foreign students who came to Kansas for an education and then took a job elsewhere in the United States. Indeed, college students in Kansas in 1980 who had lived abroad in 1975 amounted to 5,635 persons, equal to 4.5 percent of native Kansan college students. This statistic is a gross inflow. Unfortunately, I cannot calculate a net flow between Kansas and foreign countries because I have no information on the number of Kansans who studied abroad. But if the number of Kansans studying abroad is assumed to be small, then the net inflow of out-of-state and foreign students would add up to almost 6.8 percent of all 1980 Kansan college students. This could very nearly explain a 7 percent net outflow of college-educated people such as the one that occurred between 1975 and 1980. On balance, the apparent brain drain of Kansas college students during 1975-1980 may simply reflect an exodus of students who came here for college and then left.

However, this argument should not be pushed too far. It is clear from the above comparisons that Kansas was doing worse than the United States as a whole in retaining college students during 1975-1980. That is, the previous argument states that Kansas may have broken about even on net imports and exports of per-

Table 1
Kansas Imports of Students in 1980

Total Kansans attending college	124,871
Kansans attending out-of-state colleges	−24,937
Kansans attending Kansas colleges	99,934
Out-of-state students in Kansas colleges	+27,808
Total attending Kansas colleges	127,742

Note: "Kansans" are defined as those who lived in Kansas in 1975.
Source: *Geographic Mobility.*

sons attending college. However, the United States as a whole did not break even; instead, it probably came out ahead because of the foreign students who came here to study and then stayed on. One way to see this is to compare Kansas's 2.3 percent net gain of college students with our 7 percent loss of college-educated adults. Clearly the other states are picking up some additional population relative to Kansas. In effect, the foreign students we educated ended up joining the work force in other states.

Young Workers

I turn now to some additional comparisons, based on income, occupation, and age. Unfortunately, the remaining data in *Geographical Mobility* do not give the base numbers of persons in Kansas in each category, but only show the numbers of persons who moved in or out of state. Therefore the only rates I can calculate are the net outflows as a percentage of the gross outflows. In all categories I have omitted any data for persons under the age of 25. Since most college students are under 25, this allows me to minimize, but not eliminate, additional discussion of how their rather complex situation affects the data. In all of the following comparisons, I have also subtracted foreign in-migrants from total in-migrants to arrive at in-migrants from other states. I have concentrated mainly on the group of persons aged 25 to 34 in 1980.

Table 2 shows that there was a substantial net outflow of persons aged 25 to 34 between 1975 and 1980. The total net outflow in this age-group was 10,181 persons. There was a net outflow at every level of income; however, the outflow rates were generally much higher at annual incomes over $10 thousand than at lower incomes. Table 3 shows the same age group, broken out by occupation instead of income. These data show a net outflow in most occupations, and the net outflow rates tend to be substantially higher in the higher prestige and higher skill occupations. Small net inflows occurred in the relatively lower paying occupations of household services, farming, and armed forces. Table 4 shows that for this age-group the net outflow rates increase with the years of education. Apparently, all kinds of young workers were tending to leave the state, but workers with more education were the most likely to leave.

Table 2
Kansas Interstate Migration, 1975-1980
Young Workers by Income

Subgroup	In-migrants	Out-migrants	Net Out-migration	Net as Percent of Out-migration
No income	9,518	9,560	42	0.4
Less than $2,999	9,458	10,037	579	5.8
3,000-5,999	8,656	9,166	510	5.6
6,000-7,999	7,250	7,710	460	6.0
8,000-10,999	6,968	7,960	992	12.5
10,000-14,999	14,909	17,781	2,872	16.2
15,000-19,999	9,371	11,566	2,195	19.0
20,000-24,999	5,479	7,059	1,570	22.2
More than 25,000	5,059	6,010	951	15.8
Total persons aged 25 to 34	76,668	86,849	10,181	11.7

Source: *Geographical Mobility.*

Table 3
Kansas Interstate Migration, 1975-1980
Young Workers by Occupation

Subgroup	In-migrants	Out-migrants	Net Out-migration	Net as Percent of Out-migration
Employed	52,782	61,937	9,255	14.9
Managerial	7,400	9,067	1,667	18.4
Professional	11,546	13,888	2,342	16.9
Subtotal	18,946	22,955	4,009	17.5
Technician	2,344	3,108	864	27.8
Sales	5,176	6,039	863	14.3
Clerical	8,037	9,702	1,665	17.2
Subtotal	15,557	18,849	3,292	17.5
Household	98	52	−46	−88.5
Protective	632	684	52	7.6
Other service	3,694	4,441	747	16.8
Subtotal	4,424	5,177	753	14.5
Farm, fish	1,051	844	−207	−24.5
Precision craft	6,092	6,794	702	10.3
Operators	3,156	3,456	300	8.7
Transport	1,994	2,139	145	6.8
Handlers	1,562	1,723	161	9.3
Subtotal	6,712	7,318	606	8.3
Unemployed	2,390	3,309	919	21.8
Armed Forces	4,491	4,182	−309	−7.4
Not seeking	17,005	17,421	416	2.4
Total persons aged 25 to 34	76,668	86,849	10,181	11.7

Source: *Geographical Mobility.*

Table 4
Kansas Interstate Migration, 1975-1980
Young Workers by Education

Subgroup	In-migrants	Out-migrants	Net Out-migration	Net as Percent of Out-migration
Elementary:				
0-8 years	1,663	1,759	96	5.5
High School:				
1-3 years	5,349	4,774	−575	−12.0
4 years	23,354	25,706	2,352	9.1
College:				
1-3 years	19,179	20,961	1,782	8.5
4 years	15,044	17,683	2,639	14.9
5 + years	12,079	15,966	3,887	24.3
Total persons aged 25 to 34	76,668	86,849	10,181	11.7

Source: *Geographic Mobility.*

However, it is important to understand that many people in the 25-34 age-group are former college students we discussed above. It would be desirable to remove them from the data so as to focus our attention on non-college effects. While I cannot accomplish this task exactly, a crude estimate can be made. Let us assume that one-half of Kansas college students were over the age of 20 in 1975. If so, then one-half of the same group were over the age of 25 in 1980. Assume also that former college students under and over 25 were equally likely to have migrated by 1980. Under these assumptions, exactly one-half of the 1975 college student group would have been included in the age 25-34 data. If we subtract one-half the net outflow of former college students (or 7,336) from the net outflow for ages 25-34 (10,181), we reach an estimated net outflow of 6,513 persons aged 25-34 in 1980 who had not attended college during 1975. Using the same assumptions, the net outflow amounts to 9.4 percent of the gross outflow of such persons.

This net outflow also amounts to about half the 12,657 net outflow for the whole state. Together, the net outflow of young workers plus that of former students appear to explain the entire net outflow of the state. But there was also an additional net outflow of 7,943 persons aged over 34. These three losses were offset by a net gain among entering college students, as well as among other persons under 21. These data do seem to reveal a disproportionate exodus of better-educated young workers during 1975- 1980. This conclusion is buttressed by a comparison of rates. For the state as a whole, the net outflow was only 4.4 percent of the gross outflow, or less than half of the corresponding rate (9.4 percent) estimated above for young workers.

Interpreting Gross Flows

It seems to me that we might want to make two rather tentative, and also somewhat opposing, inferences from the data we examined above. One the one hand, it seems that the more closely we zero in on specific well-educated subgroups, then the higher are the measured rates of net out-migration. This supports the brain-drain thesis. On the other hand, net rates of out-migration are uniformly much smaller than the corresponding gross rates. Among all of the high human capital subgroups I examined above, the highest observed ratio of net outflow to gross outflow was 27.8 percent (for technicians 25-34). This tends to imply that the gross measures of out-migration reported in the two studies were rather overblown.

A defender of the brain-drain thesis might legitimately answer this criticism in two ways. First, the brain drain in Kansas may have grown much worse since the 1980-1981 recession; this would not be apparent in the 1980 Census data I used above. Second, the two studies were substantially more disaggregated than any of the data I cited. That is, engineering graduates of a flagship university and National Merit semifinalists probably represent a very high amount of human capital on average. Moreover, persons in these two categories are highly mobile because the categories are defined at a moment when the individuals are not tied to any particular current job or geographical location. Perhaps it is possible that the net outflow rates for these groups are indeed a larger fraction of the gross rates than the fractions I reported above. I will attempt to address these points in the second part of this article, which will be published in the next *Kansas Business Review.*

Conclusions

These data seem to support, or at least not contradict, several interpretations.

First, Kansas in effect has chosen to engage in the economic activity of importing non-native college students, educating them, and then re-exporting them. This may or may not be a profitable activity for the state as a whole; the subject deserves some further study. In any case, this activity should be carefully distinguished from other activities associated with the brain drain problem.

Second, after the data are corrected so as to remove this educational migration, there appears to be a real brain drain. In particular, Kansas suffered a net loss of some six or seven thousand young workers with above-average human capital during 1975-1980. The loss rates appear to increase with the human capital or earning power of the individual.

On balance, the apparent brain drain of Kansas college students during 1975-1980 may simply reflect an exodus of students who came here for college and then left.

Apparently, all kinds of young workers were tending to leave the state, but workers with more education were the most likely to leave.

Third, the salient loss rates for measuring the brain drain are the net rates after correcting for in-migrants. Net loss rates in every category appear to be a relatively small fraction of gross loss rates such as were measured in the *Eagle-Beacon* and Thomas studies.

Notes

[1] Steve Thomas, "K.U. Engineering Graduates and the Brain Drain," *Kansas Business Review* 10(1):14-16 (1986).

[2] The date of the data collection was supplied in a private communication.

[3] Susan Freinkel, "State Seeks to Stem Loss of Top Students," *Wichita Eagle-Beacon*, February 10, 1986. Susan Freinkel and Al Polzinski, "Bright Young Kansans Slipping Away," *Wichita Eagle-Beacon*, February 9, 1986.

[4] Joe Sicilian first drew my attention to this point.

[5] *Geographical Mobility for States and the Nation*, 1980 Census of Population, U.S. Department of Commerce, Bureau of the Census, Publication PC80-2-2A, Table 9.

[6] *Geographic Mobility*, Table 11.

[7] Anthony Redwood, Daniel L. Petree, and Gary R. Albrecht, "Long-Term Structural Changes in the Kansas Economy," *Kansas Business Review* 8(2) (1985).

[8] *Geographic Mobility*, Table 9.

[9] *Geographic Mobility*, Table 9.

[10] *Geographic Mobility*, Tables 12 and 16.

[11] The economic impact of native Kansans who attend college in Kansas also deserves study. Even if they leave Kansas after studying here, it may be better for the state economy to try to keep them here through college. The Kansans who attend college out of state often take with them a flow of income from their Kansas parents.

The Kansas Revenue Shortfall

Darwin Daicoff

Dr. Darwin Daicoff is a professor of economics at the University of Kansas and has served on numerous taxation and economic committees by appointment of the Governor and Legislature. Dr. Daicoff was chief economist and director of the Kansas Office of Economic Analysis and director of the Institute for Economic and Business Research at the University of Kansas. He has been a member of the Consensus Revenue Estimating Group since its formation.

Introduction

Four years ago this review contained an article describing Kansas general fund revenue estimating as used by the Governor and Legislature for budgeting purposes.[1] That article presented a discussion of the nature of the Kansas revenue estimating procedure. While there have been some changes since 1983, the essential elements of the procedure remain unchanged. The difficulties the state has faced as a result of recent revenue shortfalls prompt the current concern with revenue estimates. This article is one consequence of that concern.

The Ability to Forecast Economic Activity

One of the major measures of a state's economic activity is personal income—the before-tax total income received by the residents of a state. The ability to correctly forecast Kansas personal income is critical to a projection of future economic activity and, consequently, to a forecast of state revenue. The Consensus Revenue Estimating Group produces estimates of Kansas Personal Income each November; these estimates are revised at the Group's March and subsequent November meetings. For example, on November 9, 1985, an estimate for Kansas Personal Income in 1986 was provided; this estimate was revised on March 31, 1986, and again on November 6, 1986.

The accuracy of recent personal income forecasts can be measured by an examination of the estimates for 1985 and 1986. It must be understood that measured personal income (nominal personal income) growth consists of two components. One is an inflation factor; the other is a real factor. Growth of nominal personal income can be expressed as a function of these two elements; each is capable of producing an error in the estimate of income growth. We will compare our inflation estimates with the national Consumer Price Index for All Urban Consumers, since there is no specific inflation index for Kansas.

The breakdown of the fiscal 1985 and 1986 Kansas Personal Income estimates in Table 1 shows that the Consensus Revenue Estimating Group was *very* ac-

The ability to correctly forecast Kansas personal income is critical to a projection of future economic activity and, consequently, to a forecast of state revenue.

curate in estimating the real, net of inflation, personal income growth but was quite inaccurate in estimating inflation—the inflation estimate was much too high. The Consensus Revenue Estimating Group missed the relatively slow inflation in 1985 (largely caused by modest price rises in the food and energy components of the Consumer Price Index) and the very modest inflation in 1986 (largely the result of the falling price of the energy component).

Two comments are appropriate. First, the Group's inflation estimates for 1985 and 1986 were similar to estimates made by other forecasters. Very similar estimates were made by equivalent groups in other states; by large commercial economic forecasting firms; and by other national private and public forecasting organizations. They *all* missed the reduction in inflation. Second, only to a limited extent can the improvement in the recent inflation record be traced to national economic policy; the major explanation can be found in the inability of the OPEC oil cartel to maintain petroleum prices—hardly something that can be expected to be forecasted by the Consensus Revenue Estimating Group.

The Revenue Shortfall

In recent years the Consensus Revenue Estimating Group has overestimated state general fund receipts. Between the fiscal years 1982 and 1986 the adjusted original estimates have averaged 6.6 percent more than actual receipts.[2] This overestimation can be analyzed by examining the estimates for the past two completed fiscal years.

For fiscal year 1985 adjusted original general fund receipts were forecasted to be $1.698 billion; actual receipts were $1.659 billion. The overestimate was $39.2 million. As Table 2 shows, much of this difference is represented by a serious overestimation of receipts from the state's individual income tax, which were $45.5 million lower than expected. Had the adjusted original estimate for individual income tax receipts been accurate, the adjusted original general fund receipts forecast would have *underestimated* receipts by $6.3 million.

Table 1
Estimates of Kansas Personal Income Growth

	Inflation	Real Growth	KPI Growth
1985 estimated	4.4	2.20	6.7
Actual	3.6	2.22	5.9
Overestimate	0.8	0.02	0.8
1986 estimated	3.6	2.00	5.7
Projected actual	1.9	1.90	3.8
Projected overestimate	1.7	0.10	1.9

Table 2
The Kansas Revenue Shortfall
(in millions of dollars)

	Fiscal 1985		Fiscal 1986	
	General Fund	Individual Income Tax	General Fund	Individual Income Tax
Forecasted revenues	1,698	649	1,731	650
Actual revenues	1,659	603	1,641	582
Overestimated revenues	39	46	90	68
Overestimate/ forecast	2.3%	7.0%	5.2%	10.4%

The situation for fiscal 1986 was similar. The overestimate for general funds receipts was $89.8 million, and for the individual income tax the overestimate was $67.8 million. If individual income tax collections were predicted accurately, the overestimation would have been reduced to $22 million.

From these calculations one conclusion emerges: In fiscal year 1985 and fiscal year 1986 most of the overestimation of general fund receipts (and consequently the revenue shortfall) was due to overestimation of individual income tax collections. This results from both the fact that this tax is the largest single contributor to the state general fund and that the overestimation of the yield of this tax was high in both absolute and percentage terms.

This is not to say that there weren't differences between the estimates and actual receipts for other taxes. For example, in fiscal year 1986 the sales and use tax overestimate was $22.9 million or 3.9 percent, the corporate income tax overestimate was $4.6 million or 3.5 percent, and the severance tax overestimate was $4.3 million or 4.5 percent. The inaccuracy of individual income tax receipts, however, accounts for the majority of the revenue shortfall for the past two years. Absent that error, the revenue estimates would have been better than they had ever been over the 13-year record of the Consensus Revenue Estimating Group.

. . . the Group's inflation estimates for 1985 and 1986 were similar to estimates made by other forecasters.

It should be noted that total general fund receipts include nontax revenue. Included are the interest earnings from state funds and agency earnings. In addition, net transfers from the general fund to other state funds (such as the transfer of a portion of the sales tax on motor vehicles to the state highway fund and the transfer of the revenue from the state's motor carrier property tax to the special city and county highway fund) reduce general fund receipts. An equivalent calculation to that presented above (related to general fund receipts) can be made relative to tax receipts only. The bottom line of such a calculation is that without the individual income tax overestimation, the adjusted original general fund tax receipts would have been only $7.5 million (0.5 percent) too high in fiscal year 1985 and only $11.9 million (0.7 percent) too high in fiscal year 1986. It seems that the Group's ability, absent the individual income tax error, to forecast taxes is a bit superior to its ability to forecast total receipts.

The Problem

Revenue collections in Kansas, as in any other state, can be related to the state's tax base. To some extent, by tax exporting, Kansas may succeed in extracting revenue from outside the state. However, it makes some sense to relate receipts to personal income and, thereby, to calculate an effective tax rate.

Between 1982 and 1986, in order to secure additional revenue, Kansas adopted a number of permanent and temporary tax increases and accelerated the timing of tax receipts. Estimates of adjusted revenue collections that eliminate the revenue consequences of these changes have been made. These figures permit an identification of the factors that have contributed to the state's changing revenue situation.

Over the 1982-1986 time period, actual Kansas general fund revenue grew at an average annual compound rate of 6.6 percent. Of this increase, 4 percent was the result of tax base growth and the remaining 2.6 percent was the result of statutory tax rate increases and acceleration. In contrast to the 4 percent base growth, there was a 6 percent annual personal income growth for the four years. To express this somewhat differently, even if 1986 tax rates and rules regarding the timing of tax payments had applied in 1982, the growth of general fund receipts between 1982 and 1986 would have averaged 4 percent per year, while personal income was growing at a 6 percent annual rate. In this sense, the state general fund has failed to capture a constant share of Kansans' income; effective tax rates fell from 5.71 percent of personal income in 1982 to 5.28 percent in 1986.

In part, this record is the result of external forces, such as the oil and agricultural price declines; some are the consequence of legislative action (reducing the individual income tax by removing the limitation on the deductability of federal individual income taxes); and some are the result of inaction (continuing conformity to the federal corporate income tax while the federal tax was cut dramatically).

Conclusion

The 1983 article concluded with the following:

> Two aspects of revenue estimating . . . will make future estimating more difficult and likely result in less accurate forecasts than were made prior to fiscal 1982. First, as economic development proceeds in Kansas, it is likely that the basic structure of the Kansas economy will come to reflect the national economy more directly, i.e., it will become less agriculturally-related and will correspond more closely to the national industrial mix. As a consequence, national economic fluctuations will register more directly in the state, and, in turn, the historical stability of the Kansas economy will be lost.
>
> Second, the relative contribution to the state general fund of various individual revenue sources has changed significantly over recent years. The tax structure has shifted away from sales and excise taxes and towards income and privilege taxes . . . this change is equivalent to a shift to more volatile revenue sources which means that a change in Kansas personal income will carry with it a larger relative change in state general fund receipts. As a consequence of these two factors, revenue estimating will be more difficult in the future.[3]

With the exception of increases in the general sales tax and some excise taxes (such as the cigarette tax), much of this statement is relevant today. In addition, emphasis should be put on the dependence of Kansas income tax collections on federal income tax rates and structure. As the federal tax changes, Kansas tax yields change unless Kansas changes its system.

Nonetheless, the Consensus Revenue Estimating Group has been extraordinarily able to forecast *real* economic activity in Kansas. The Group's inflation forecasts, however, have been excessive, in line with other forecasters throughout the nation. Consequently, forecasted nominal Kansas personal income growth rates have been too large. As a result of these overstated income estimates, tax collections, and particularly individual income tax collections, were forecasted to grow more rapidly than they actually grew. Finally, this overestimation accounts for most of the difference between forecasts and total general fund receipts.

In fiscal year 1985 and fiscal year 1986 most of the overestimation of general fund receipts was due to overestimation of individual income tax collections.

. . . the state general fund has failed to capture a constant share of Kansans' income; effective tax rates fell from 5.71 percent of personal income in 1982 to 5.28 percent in 1986.

Recently, considerable effort has been directed toward improving the Group's ability to forecast Kansas receipts. While it is too soon for a complete analysis of the results of this effort, a bit of evidence is available. It should be noted that in November 1986 the Group made a $93.6 million reduction in estimated 1987 receipts. The current fiscal year is more than half over. At this time, overestimation of receipts does not seem to be present; collections are running ahead of the estimate. Nonetheless, the state's fiscal position merits careful monitoring of revenue collections.

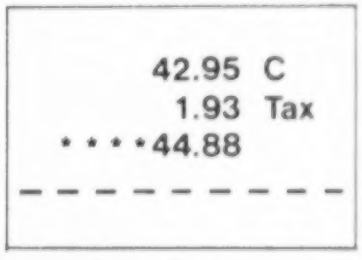
Notes

[1] Darwin Daicoff, "Kansas Revenue Estimating," *Kansas Business Review* 6(3):7-11.

[2] Adjusted original estimates are the original estimates made in November or December, prior to the next fiscal year, adjusted to account for legislation enacted which affected receipts to the general fund.

[3] Daicoff, "Kansas Revenue Estimating," p. 11.

A Logical Approach to Sales Tax on Services



C. David Newbery
Loran B. Smith

David Newbery is an attorney and an assistant professor of taxation at Washburn University. He is former director of taxation for Kansas. Loran B. Smith is an assistant professor in the Department of Political Science at Washburn University.

The original Kansas Retail Sales Tax Act of 1937 taxed the retail sale of all tangible personal property and taxed only four specifically enumerated services. Although legislative history is scant, apparently the intent of the original act was to tax sales of tangible personal property and not to tax services. Exceptions made four services taxable. As time passed, services became a more important part of the economy, and the legislature reacted by adding to the list of services subject to tax.

Today there are 18 different categories of services subject to sales tax (K.S.A. 79-3603) and 30 categories of exemptions that relate to both sales of property and sales of services (K.S.A. 1985 Supp. 79-3606). Many of the categories of services taxed today are extremely broad. As a result, a majority of services are now subject to tax. Therefore, it can no longer be said that the intent is not to tax services. Rather, there is currently a clear intent to tax retail services subject to certain exceptions. Unfortunately, the language of the Sales Tax Act is still structured as if "taxable" services were the exception rather than the general rule.

Unintentional Sales Tax Exemptions

The problem with this archaic structure of the Act is that numerous services have unintentionally "fallen through the cracks." We have coined the term "default exemptions" to describe untaxed retail services that are not statutorily exempt. "Default exemptions" refer to retail services that are simply not on the list of taxable services in K.S.A. 79-3603 (the imposition section). Table 1 presents a partial list of default exemptions, or services not included on the list of taxable services.

Although there may be good public policy reasons for not taxing some of the services listed in Table 1 (i.e., medical services), there are other services on the list that do not deserve exemption. The real concern, however, is not the fact of exemption itself, but rather the lack of forum for debate of what should and what should not be taxed. Statutory exemptions (K.S.A. 79-3606) have come about by legislative action with all interested parties having an opportunity to be heard. On the other hand, historical evidence shows that the legislature has never looked specifically at most default exemptions.

The authors believe the default exemptions deserve some attention. In the inter-

The problem with this archaic structure of the Act is that numerous services have unintentionally "fallen through the cracks."

Table 1
A Partial Listing of Default Exemptions from Sales Tax

Accounting, auditing and bookkeeping
Advertising services
Air (flying) services
Appraisers
Architects
Barbers
Beauticians
Bus services
Collection and credit services
Day care services
Detective services
Delivery and shipping services
Dentists
Employment agencies
Engineers
Escrow services
Excavation services
Financial service
Health clubs and reducing salons
Inspection services (i.e., electrical, plumbing, etc.)
Instruction (i.e., music, dance, art, craft, sport, etc.)
Insurance
Interior designers
Investment counselors
Janitorial services
Laundry and dry cleaning services (other than coin operated)
Lawyers
Limousine services
Management consultants
Massage parlors
Medical services
Morticians
Optometrists
Parking lots and garages
Pet cemeteries
Physicians
Public relations services
Realtors
Security services (other than sale of property)
Stock brokers
Storage services
Tax preparation services
Taxi services
Telephone answering services
Trash hauling services
Travel agencies
Veterinarians

est of equity, these exemptions should pass the same muster as statutory exemptions. Equity for this purpose simply means that similarly situated citizens should be taxed in a similar fashion unless there is some public policy reason for distinguishing between the two. If service provider *A* must collect sales tax, then there should be a reason why service provider *B* is not required to collect sales tax.

An example will illustrate "equity" for this purpose. K.S.A. 79-3603(q) imposes tax on "the service of repairing, servicing, altering or maintaining . . ." property. The Kansas Department of Revenue originally interpreted this language to include janitorial services like sweeping and dusting, which constituted "servicing" or "maintaining" the floors and furniture. On the other hand, K.S.A. 79-3603(p) imposes tax on "the service of installing or applying tangible personal property . . ." The janitorial service of waxing floors is clearly taxable under K.S.A. 79-3603(p) because the wax is tangible personal property that is being "applied" to other property. The Kansas Court of Appeals has subsequently ruled that the janitorial services of dusting and sweeping do *not* constitute "servicing" or "maintaining" property and are therefore not subject to sales tax.[1] However, it is painfully clear that the janitorial service of waxing floors continues to be taxable. There can be no rational public policy reason for distinguishing between the service of sweeping floors and the service of waxing floors. Sweeping floors is a default exemption; it "fell through the cracks" of a poorly structured statute.

A Logical Approach

The solution is not to add more services to the taxable list in the imposition section, but rather to change the whole structure of K.S.A. 79-3603. Rather than listing multiple subsections defining what is subject to tax, the language should be concise and all-inclusive. For example, the imposition section might be revised to read as follows:

> 79-3603. **Tax Imposed; rate.** From and after the effective date of this act, for the privilege of engaging in the business of selling tangible personal property at retail in this state *or rendering or furnishing any service at retail in this state*, there is hereby levied and there shall be collected and paid a tax at the rate of four percent (4%) upon the gross receipts received from the retail sale of tangible personal property *or the retail sale of services within this state*. (proposed revisions in italics)

To the extent that any retail services included in Table 1 (or any other new services included in the proposed language) were desired by the legislature to be exempt from tax, then the proposed exemption would run the course of legislative debate, and the impact of state revenue loss from such exemption would be weighed against the arguments in favor of such exemption.

The Hodge Report

In January 1970, the Joint Committee on the State Tax Structure, chaired by Senator Frank S. Hodge, issued recommendations and a lengthy report. The committee's report recognized the following traditional arguments for inclusion of services in the sales tax base:

1. The sales tax should be as broadly applicable to consumer expenditures as possible, and therefore the tax should be imposed on services as well as tangible property because both satisfy personal needs and wants.

2. Taxation of services makes the sales tax less regressive because expenditures for services tend to increase as personal income rises.

. . . historical evidence shows that the legislature has never looked specifically at most default exemptions.

There can be no rational public policy reason for distinguishing between the service of sweeping floors and the service of waxing floors.

3. Revenue from the sales tax is more responsive to rising levels of personal income and economic activity if services are taxable, because under such conditions, expenditures for services increase relatively more than purchases of basic commodities.

4. Administration of the sales tax is simplified if the tax is applicable to services rendered in conjunction with sales of tangible personal property, i.e., it is not necessary to separate the amount charged for services from the amount charged for such property.[2]

The report also noted that "there has been a gradual trend (in other states) toward including . . . services in the tax base."[3] The committee invited the Iowa director of revenue to explain and answer questions about Iowa's expansion of its sales tax base to include a variety of enumerated services. It appears the committee discarded the idea of taxing all retail services primarily because of his testimony. The committee did recommend expanding the tax base to include services rendered in connection with the sale of property by retailers who were already subject to tax.

The committee's stated reasons for not recommending taxation of all services are as follows:

1. The director of revenue for Iowa reported that additional revenues from taxing new services were substantially below original estimates, and he questioned whether "the pains of administrative labor (were) worth the offspring."[4]

2. The committee anticipated administrative problems with ". . . determining situs of intangible services, their allocation, and the application of the use tax to such services."[5]

3. Because the *use* tax would be difficult to apply to services, the committee feared that ". . . purchases (of services) from out-of-state sources would be encouraged to the disadvantage of local suppliers."[6]

Although the committee's reasons for not recommending an all-inclusive tax on services may have been valid in 1970, they do not appear to be valid today. The tremendous growth of the service economy has dramatically changed the amount of potential revenue that an all-inclusive tax might raise. According to very conservative data printed in the U.S. Department of Commerce's 1982 Economic Census of Kansas, the gross sales tax receipts of major, non-medical service industries would generate $39 million in new revenue for the state if taxed at the present rate of 4 percent.[7] If one disregards the fact that this is probably a gross underestimate of potential new revenue, it still represents an approximate 7.5 percent increase in state sales tax receipts.

The potential administrative problems of situs, allocation and use tax should not be as troublesome today as in 1970 because the new services taxed since 1970 have provided state government with considerable experience in dealing with these problems.[8] Since the Kansas Department of Revenue already has the administrative expertise to successfully tax services, it should take few additional resources to tax most of the remaining services—especially when those resources have the potential to generate a significant amount of new revenue.

There is one final argument in favor of a broader, all-inclusive sales tax on services; such a tax would reduce the inherent regressivity of the sales tax. However, to the extent that services purchased primarily by higher income consumers are exempt from taxation, then the sales tax is even more regressive than it would otherwise be. On the other hand, taxation of additional services reduces regressivity. As the Hodge Report noted, ". . . taxation of services makes the sales tax less regressive because expenditures for services tend to increase as personal income rises."[9]

Conclusion

In conclusion, the authors feel that the current statutory scheme of sales taxation in Kansas is out of step with current trends in the economy and with the current state of the art of tax administration. In recent years there has been concern that the traditional tax base available to state and local government has not kept pace with revenue needs, as evidenced by the recent sales tax increase from 3 to 4 percent. The authors believe that a broader based sales tax on retail services is at least a partial answer to providing a more stable, productive, and equitable tax base.

Notes

[1] *In re Tax Appeal of R & R Janitor Service*, 9 Kan. App 2d 500, 683 P 2d 909 (1984), *Review denied*, Docket No. 56,093 (9/6/84).

[2] *Report and Recommendations of the Kansas Joint Committee on the State Tax Structure*, chaired by Senator Frank S. Hodge, 1970 (hereinafter cited as *Hodge Report*).

[3] *Hodge Report*, pp. 14-15.

[4] *Hodge Report*, pp. 15-16.

[5] *Hodge Report*, p. 16.

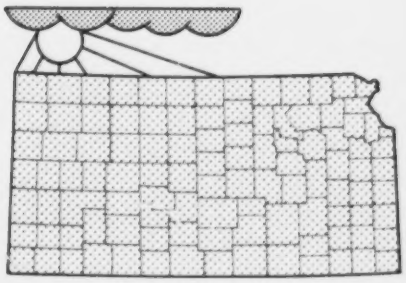
[6] *Hodge Report*, p. 16.

[7] U.S. Department of Commerce, Bureau of the Census, "1982 Census of Service Industries, Kansas, SC82-A-17," *1982 Economic Census* (Washington, DC: U.S. Department of Commerce, 1984), pp. 3-6. This data includes only businesses that had employees and therefore excludes self-employed service providers' receipts.

[8] See *Capital Electric Line Builders, Inc. v. Lennen*, 232 K. 379, 654 P.2d 464 (1982), in which the Kansas Supreme Court ruled that certain local sales tax administrative regulations dealing with situs of taxable services were invalid. The legislature reacted to perceived administrative difficulties resulting from this case by amending K.S.A. 12-191 (see 1983 Kan. Sess. Laws, Ch. 48, Sec. 4).

[9] *Hodge Report*, *Supra*, note 13 at 14.

Managers' Evaluation of the Western Kansas Business Climate



Abbas Ali
Robert C. Camp
Douglas Kern

Abbas Ali, Ph.D., is associate professor of management in the School of Business at Fort Hays State University. Robert C. Camp, Ph.D., is dean of the School of Business and director of the Small Business Development Center at Fort Hays State University. Douglas Kern is a doctoral candidate at Oklahoma State University.

Overview of the Kansas Economy

During the 1971-1979 period, the Kansas economy experienced continuous growth. Kansas was particularly strong relative to the national economy. Although some of the main economic sectors experienced difficulty, there was no time during the 1970s when agriculture, automobile manufacturing, aviation, and energy were down simultaneously. The performance of the Kansas economy led many to believe that Kansas was recession-proof, but recent declines in the Kansas economy indicate that it is not.

Signs of problems in the Kansas economy are not limited to a particular sector or measure of economic well-being. First, new business formation in recent years has been well below that of the nation and significantly below that of Oklahoma and Colorado.[1] Second, the existing manufacturing mix of Kansas, although diverse, tends to be less concentrated than average in technology, and manufacturing is concentrated in urban areas.[2] Third, Kansas farm proprietors' income has declined in the past few years. It was predicted, furthermore, that 10 to 15 percent of Kansas farmers would fail in 1986.[3] Fourth, the number of people in Kansas is declining, and the largest group of out-migrants are young, educated adults.[4] Fifth, employment rates are below the U.S. average. From 1979 to 1985 employment in Kansas grew only 3.7 percent, while U.S. employment as a whole grew 8 percent.[5] Likewise, Kansas suffers from job losses in high-technology, especially in the computer and miscellaneous transportation equipment industries.[6] Finally, Kansas does not have a high rate of investment in those business activities most likely to grow rapidly in the decade.[7]

Three recent developments, however, provide grounds for optimism about the economic future of Kansas. First, the Legislature funded the *Kansas Economic Development Study*. This study resulted in a wide range of legislative economic development initiatives. Second, business executives, though not optimistic about overall economic conditions in the state, display a high level of awareness and readiness to cope with problems.[8] And finally there appears to be agreement among Kansas researchers and the business community that the state's competitive position can be enhanced if there is an understanding of the factors that are favorable or unfavorable for a business located in Kansas.

Why Firms Locate or Expand in Kansas

Neglected but critical questions related to the determinants of whether a business will locate and expand in Kansas are now being addressed. Three studies have been conducted recently to provide reliable guides concerning business executives' perceptions of the business climate in Kansas. The first study was conducted by McLean et al. They found that labor market factors are important in locational decisions and that tax levels and local amenities and facilities are viewed as not significant. They also found that the relative importance of various factors in the decision by new firms about where to locate differs across industries.[9]

The second study, by Redwood and Krider, was more comprehensive and made recommendations for restoring a healthy economic environment.[10] This study suggests that factors affecting business location decisions, such as wages, energy, the labor market, transportation, and taxes, are not out of line in Kansas. In general, these factors are favorable.

A third study by Smith and Borowski showed that labor skills and costs, transportation facilities, the cost of property, and access to markets are significant factors in high-tech manufacturing firms' location decisions.[11]

The above studies, though valuable, have some limitations. For example, the third study is industry specific: It deals with high-tech firms located mainly in the eastern part of the state as well as in other states. The other two studies are general

. . . there appears to be agreement among Kansan researchers and the business community that the state's competitive position can be enhanced if there is an understanding of the factors that are favorable or unfavorable for a business located in Kansas.

The majority (52 percent) are planning to expand in another state while keeping present operations in western Kansas . . . . an additional 33 percent of the respondents marked that they have no immediate plans to expand in Kansas.

in nature and do not address the regional specificity and geographical diversity of the state. The western part of Kansas is mostly rural, and agriculture is the dominant industry. The vulnerability of the region to changes in agriculture and the difficulty in attracting new business has contributed to population decline, net out-migration, and an aging population.[12] The purpose of this study, therefore, is to obtain the actual perceptions of business owners and managers in western Kansas on the factors that attract them and influence their decisions to locate and expand. An analysis of these perceptions may provide insight regarding the business climate and location factors specific to western Kansas. The study may also contribute to the development of useful decision tools.

The Questionnaire

In January 1986, questionnaires were sent to the president, manager, or owner of 450 business organizations in western Kansas. Participants were selected from the Chamber of Commerce directory of sample cities. The questionnaire was developed by Beam and Carey for a Michigan study.[13] It seeks data on what business people perceive to be favorable, neutral, or unfavorable about having their business located in western Kansas. The questionnaire also requests information about the company's plans to expand or remain in Kansas, or to expand in or move to another state.

Two hundred (44 percent) of the questionnaires were returned, of which 174 were usable. About 39 percent of the respondents were in service businesses, and 25 percent were in retailing. Most of the businesses (75 percent) employed ten or fewer people. Sixty-five percent of the companies had been in business for more than ten years.

Results

Participants were asked to grade western Kansas on 28 factors judged to affect the quality of business climate. Possible

Table 1
Respondents' Evaluation of Business Climate in Western Kansas

Business Climate Factor	Mean Response*
Labor	
availability of skilled labor	3.24
availability of unskilled labor	3.71
cost of skilled labor	3.43
cost of unskilled labor	3.46
Capital	
availability of capital	3.23
cost of capital	2.76
Transportation	
ability to ship resources in	3.44
ability to ship goods out	3.48
Market	
being close to major customers	3.29
Kansas taxes	
tax incentives and deferrals	2.70
workers' compensation	2.83
property taxes	2.60
single use business tax	2.61
state income and sales tax	2.93
Kansas unemployment taxes	2.60
Kansas laws	
Kansas Occupational Safety and Health Administration Act (KSOSHA)	3.91
Energy and utilities	
availability of electricity	2.64
cost of electricity	3.89
availability of natural gas	3.89
cost of natural gas	3.26
availability of water and waste disposal	3.09
cost of water and waste disposal	3.81
Construction	
availability of land for expansion	3.17
cost of land for expansion	3.00
facility or plant construction costs	3.68
Community	
educational, cultural and social conditions	3.94
living conditions	3.32
recreational environment	1.47

*Possible ranking ranged from five (very favorable) to one (very unfavorable).

responses ranged from "very favorable" (score of 5) to "very unfavorable" (score of 1). Table 1 shows the mean response to each item.

Labor

Respondents indicated that there is enough skilled and unskilled labor in western Kansas. There are several possible explanations for this finding. First, farms and farm-related businesses use unskilled or semi-skilled labor. Few western Kansas businesses require highly skilled labor. Second, the slow-down in petroleum-related activities and the closing of some manufacturing plants (e.g., the Travenol plant) increased the number of people seeking work. Third, family ties sometimes prevent unemployed people from leaving their hometowns to find work.

Respondents also perceived the cost of both skilled and unskilled labor to be favorable to business. By any business standard this is a healthy indicator.

Capital

Respondents also indicated that there is a sufficient supply of capital and other financial resources in western Kansas. The cost of capital, however, was perceived as being slightly unfavorable. High cost of capital might be the result of the conservative loan policy that banks have adopted in the last few years. The decline in oil revenues and the instability of agricultural markets induce bankers to be more careful and to increase the risk premium component of the cost of capital.

Transportation

Respondents gave western Kansas a good mark for transportation. Highways, railroads, and air services are apparently adequate for shipping resources in and out of the region.

Energy and Utilities

Business people viewed the availability of electricity as a slight problem, but the availability of gas was viewed as highly favorable. This perception reflects the fact that western Kansas is well endowed with oil and gas. Costs of utilities in general were perceived as favorable.

Market

Proximity to major customers is perceived as slightly favorable. This perception reflects that the majority of respondents are in service and retail businesses. It may also reflect the fact that most of the small manufacturers located in western Kansas have focused on selling to customers in the immediate region. Export of manufactured goods from the region has been quite limited.

Kansas Taxes

Business people judge property taxes, unemployment tax, business tax, and the lack of tax incentives to be somewhat unfavorable aspects of doing business in western Kansas. Among the surrounding states, the Kansas property tax is ranked the second-highest after Colorado. Docking indicates that Kansas relies more heavily than other states upon local property tax as opposed to state sources of revenue.[14] In general, the tax system is a problem for those who are encouraging targeted investment in Kansas. It may be an even greater impediment to targeted investment in western Kansas.

Kansas should consider providing tax incentives for businesses to locate in western Kansas. Since taxes are under state control, it is up to policy makers to take action to improve the impact of taxes on business. Abolishing the property tax on inventories and the recent attempts on the part of the legislature to offer a tax credit for people investing in venture capital firms have been two steps in improving the state's tax structure.

Construction

Plant construction costs and availability of land were considered to be favorable and slightly favorable respectively. The cost of land was not considered a problem. Because industrial parks are not common, the authors had expected that plant construction cost would be viewed as an impediment. The fact that respondents viewed construction costs as a positive factor may, in part, be a reflection of the types of construction anticipated by the respondents, who were mostly in retailing and service businesses.

Community

The results of this category are consistent with the general perception that the majority of western Kansans are content with existing educational opportunities and living conditions. Among the 28 factors cited in Table 1, the recreational environment was the only factor considered as highly unfavorable. Recreational facilities and other amenities are clearly not comparable to those available in the eastern part of the state.

Kansas Laws

The Kansas Occupational Safety and Health Administration Act was not considered an impediment to business activity by the respondents to this study. It would be easy to interpret this result as being related to the limited number of respondents in the manufacturing business. Even the manufacturing respondents, however, did not consider the KSOSHA to be a problem.

Summary of Rankings

In summary, the results indicate that there are a number of factors that are favorable to locating or expanding a business in western Kansas. In general, the availability and cost of skilled and unskilled labor, Kansas occupational safety law, the availability of capital, the availability and cost of utilities, availability and cost of land, construction costs, educational, cultural and social conditions, and living conditions were all considered to be either positive or neutral factors. It is worth noting, however, that none of these factors was considered highly favorable.

There were, of course, several factors that were considered to be detrimental to business growth and development. They were the cost of capital, property taxes, unemployment taxes, tax incentives and

deferrals, the single use business tax, and the recreational environment. Some of the factors that were rated are under state control: education, taxes, land for expansion. Others are not: availability of water, nearness to major customers. The state, nevertheless, is in a position to allocate more resources to enhance the competitive business image of Kansas, the educational system, and recreational facilities.

Surveys of Business Conditions in Other States

The second part of the questionnaire was concerned with the firms' perceptions of business conditions in other states and the firms' future location plans. One hundred sixty-four respondents or 90 percent indicated that they have conducted a survey in another state. Managers may have conducted surveys because they were thinking of moving or expanding elsewhere. To gain more information, the respondents were given seven statements and asked to select the one that best described their future plans for expansion and location. Table 2 summarizes the results.

Table 2
Western Kansas Respondents' Plans for Location and Expansion of Their Business

Statement in Questionnaire	Percent Who Checked Item
I plan to keep my business in Kansas and expand.	6
I plan to keep my business in Kansas without immediate plans to expand in Kansas.	33
I plan to expand in another state while keeping present operations in Kansas.	52
I have considered Kansas and have opted to stay out of Kansas.	2
I plan to move all operations to another state.	1
I have already transferred all operations to another state.	0
I plan to go out of business entirely or to sell out.	6
Total	100

The results in Table 2 are encouraging. Only 1 percent of the respondents were considering a move to another state; 6 percent were expecting to go out of business; and 2 percent have considered Kansas and have opted to stay out. The majority (52 percent) are planning to expand in another state while keeping present operations in western Kansas. Further, one should be alert to the fact that an additional 33 percent of the respondents marked that they have no immediate plans to expand in Kansas. The last point is important, since an improvement in economic conditions depends to a large extent on the attitudes and commitment of business leaders.

Additional written comments provided more information about what respondents were thinking. Individual respondents complained of scarce capital, high property and unemployment taxes, high energy costs, inadequate recreational facilities, and insufficient highways. One respondent noted that the nature of his business was changing because the average age of his customers was increasing. Another wrote that although the local economy was suffering, he could not consider relocating within the next three years because he had too much invested in his business.

This study was undertaken to explore the perceptions of western Kansas business leaders and their future expansion and relocation plans. The authors believe that shortage of water and distance from markets are special problems for western Kansas. This means solutions to economic problems of western Kansas will require perspectives and strategies different from those for the state as a whole.

The results of this study imply that it may be possible to broaden the economic base of the region by attracting industry that requires low labor cost and good transportation facilities.

There is clearly a need to capitalize on those factors that are considered positive and mitigate against those factors which are considered negative or detrimental. Particular attention, therefore, should be given to those variables which are under state control like tax law, expenditures on education, and industrial development.

Finally, participants' responses reflect a high level of awareness and readiness to be involved in the process of change. This is an asset which should be used to its full potential. To achieve this, policymakers should be receptive to business concerns and inputs.

Conclusions

The results of this study suggest three major conclusions:

1. Several factors were considered somewhat favorable for business development and/or expansion in western Kansas. Among them were availability of unskilled labor; Kansas occupa-

. . . it may be possible to broaden the economic base of the region by attracting industry that requires low labor cost and good transportation facilities.

tional safety law; cost of electricity, water, and waste disposal; availability of natural gas; construction costs; and educational, cultural, and social conditions.

2. The less favorable aspects of doing business in western Kansas were property tax, tax incentives and deferrals, Kansas unemployment taxes, single use business tax, the availability of electricity, and recreational environment.

3. The majority of the participants (over 91 percent) plan to remain in Kansas. A small minority, however, are planning to move to other states or go out of business. Of those participants planning to expand, 90 percent displayed a willingness to do so in another state.

Notes

[1] Anthony Redwood and Charles Krider, "Kansas Economic Development Study," *Kansas Business Review* 9(3):1-14 (1986).

[2] Anthony Redwood, Daniel Peter, and Gary Albrecht, "Long-Term Structural Changes in the Kansas Economy," *Kansas Business Review* 8(2):1-9 (1984-85).

[3] Shirley K. Sicilian, "The Kansas Economy," *Kansas Business Review* 9(1):24-27 (1985).

[4] Redwood, Peter, and Albrecht, "Long-Term Structural Changes."

[5] Robert Glass, "The Kansas Economy," *Kansas Business Review* 9(2):26-30 (1985-86).

[6] Tim Smith and Marla Borowski, "High-Technology Development in the Tenth District," *Economic Review* (November):9-24 (1985).

[7] Robert McLean, "Kansas Economic Development in the Decade Ahead: A Method and Application," *Kansas Business Review* 8(1):1-7 (1984).

[8] Daniel Francke and Nancy Ekart, "Farm Crisis Tempers Kansas Economy: U.S. Outlook Good," *Kansas Business News* (January):24-26 (1986).

[9] Robert McLean, Anthony Redwood, and Morris Kleiner, "Factors in Firms' Decisions to Locate or Expand in Kansas," *Kansas Business Review* 7(1):13-17 (1983).

[10] Redwood and Krider, *Kansas Economic Development Study*.

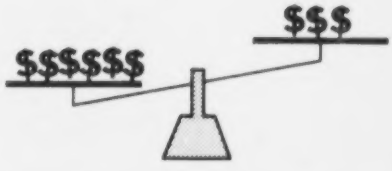
[11] Smith and Borowski, "High-Tech Development."

[12] Charles Krider, "Economic Outlook for Rural Counties," *Kansas Business Review* 9(3):14-18 (1986).

[13] Henry Beam and Thomas Carey, "A Survey of the Favorableness of Having a Business Located in Michigan as Perceived by Owners of Manufacturing Firms in the Great Kalamazoo Area," Academy of Management—Midwest Proceedings, pp. 333-345 (1983).

[14] Thomas Docking, "Property Tax Shift Looms on Horizon," *Kansas Business News* November 1985.

Costs and Benefits of Kansas Business Tax Incentives



Shirley Klenda Sicilian

Shirley Sicilian is a research economist at the Institute for Public Policy and Business Research.

Introduction

Tax incentives are a major tool of state economic development. However, states do not generally evaluate the cost effectiveness of their tax incentives. The issue is whether the cost to the state of a particular incentive outweighs the benefit accruing to the state and locality as a direct result of the incentive. This article is a cost-benefit analysis of two Kansas business tax incentives: the Job Expansion and Investment Tax Credit Act[1] and the sales tax refund.[2] The objectives of these incentives include generation of job opportunities for state residents and increasing Kansas tax revenues. This study reports the ability of the Job Creation and Investment Tax Credit and the sales tax refund to promote those objectives.

Our results suggest that the state should offer a small set of tax concessions that are relatively inexpensive in terms of tax revenues forgone. The strategy in using taxes as a tool of economic development should be to arrange the tax structure so as to 1) neutralize the tax issue for firms, and 2) send signals to industry that Kansas is willing to try to work with business.

Costs and Benefits of the Kansas Job Expansion and Investment Tax Credit

Across the United States, 31 states have job creation tax incentives and 29 states allow investment tax incentives.[3] Kansas allows a Job Expansion and Investment Tax Credit to new and expanding firms: $100 ($350 in an Enterprise Zone[4]) for each job created or for each $100 thousand of capital investment. Compared with surrounding states the Kansas credit does not stand out; it is neither among the least generous nor is it among the most generous.

The example shown in Table 1 demonstrates the Job Expansion and Investment Tax Credit for a firm outside an Enterprise Zone. The tax credit can be taken for up to ten years. The credit is recomputed each year during the ten-year period to reflect any changes in the amount of jobs or capital investment. If the situation were to remain constant for the ten-year period, the total savings to the firm (ignoring increases in federal tax liability) would have a present value of $39,747.67 (at a 10 percent discount rate).

Costs

Costs of the Job Expansion and Investment Tax Credit are defined as the dollar amount of state tax revenue forgone through operation of the tax credit for one year, fiscal 1985. Although there are some claims still unaudited, the total Job Expansion and Investment Tax Credit allowed by the state in fiscal 1985 was $663,891; for firms outside Enterprise Zones it was $637,823; for firms inside Enterprise Zones it was $26,068. A firm may take the Job Expansion and Investment Tax Credit for up to ten years. If we assume that the total capital investment and employment levels that generated this credit will be constant over the ten years the credit is allowed, then the present value (calculated at a 10 percent discount rate) of costs incurred by the state for operation of the Job Expansion and Investment Tax Credit during fiscal 1985 is $4,079,345.

Benefits

The purpose of the Job Expansion and Investment Tax Credit is to increase economic activity in Kansas by inducing firms to locate and expand in the state. If the credit is successful, costs will be offset by new revenue:

1. Income tax revenue from business would be pushed upwards as firms are induced to locate or expand in the state;

2. Business property acquired in response to the tax credit would increase property tax receipts;

3. The number of jobs in the state would increase and the new jobholders will pay personal income, sales, and property taxes.

In order to estimate these tax revenue benefits, one must first determine the increase in economic activity due to the credit. That is, how many jobs were created and how much capital was purchased by firms in order to qualify for the total tax credit given by the state. We used data from the Kansas Department of Commerce on new and expanding manufacturing firms to derive a capital to labor ratio for the new and expanding Kansas firms that qualified for the credit, estimating that it was about one job for every $235,175 of capital investment.[5] Accordingly, the fiscal 1985 Kansas credit relates to 1,925 jobs and $452,753,353 of capital investment. Also, once new industries settle in Kansas or existing industries expand, then new jobs will open up not only in that firm but also in other industries that supply the new firms. The magnitude of this ripple effect is described using an employment multiplier. Assuming a common and modest multiplier of two, we find the 1985 credit indirectly and directly responsible for 3,850 new jobs.

Obviously, a good deal of the capital and labor investment would have occurred even without the tax credit. Several studies have shown that tax incentives are not very important to decision makers.[6] One major study estimates that only 3.3 percent of new or expanding firms view tax incentives as significant in their site location decision.[7] Assuming the Kansas credit is equally influential (a 3.3 percent "response rate"), we estimate that 127 new jobs were created and $14,940,861 capital was invested in fiscal 1985 as a *direct* response to the Job Expansion and Investment Tax Credit Act. Table 2 shows the amount of capital and labor investment which can be attributed to the tax credit at different response rates.

The new jobs and capital investment represent an increase in economic activity

Table 1
Example of the Job Expansion and Investment Tax Credit

Assumptions about the firm:

1) $200,000 Kansas taxable net income
2) $1 million new capital investment
3) 100 new employees

Computation of tax liability:		
1. Kansas corporate income tax		$12,937.50
(a) 4.5% x $200,000	$ 9,000.00	
(b) 2.25% x excess of $25,000,	3,937.50	
2. Credit		6,468.75
(a) $100/employee	10,000.00	
(b) $100/$100,000 capital investment	1,000.00	
(c) Total credit	11,000.00	
Note: Total credit cannot exceed 50% of corporate income tax (50% x 12,937.50 = 6,468.75).		
3. Total income tax liability (line 1 minus line 2)		6,468.75

Table 2
Capital and Labor Investment in Kansas Due to the Job Expansion and Investment Tax Credit

Investment Attributable to Credit	Response Rate Assumption†			
	100%	3.3%	10%	19%
Capital	$452,753,353	$14,940,861	$36,220,268	$86,023,137
Labor*	3,850	127	308	731

*Figures represent amount of new jobs created which qualify for credit plus an employment multiplier effect.
†Percent of firms claiming credit which found credit significant in their decision to locate in Kansas.

in the state that increases state and local tax revenues. While the costs of the Job Expansion and Investment Tax Credit for fiscal 1985 must occur within ten years, the benefits could continue to accrue year after year, as long as the initial investment is still in place. For this study, however, we will assume that the level of benefits resulting from 1985 decisions will be constant for ten years.

Personal Income Tax Revenue

To estimate the increase in Kansas personal income tax revenue due to job creation resulting from the Job Expansion and Investment Tax Credit, we first estimated the average annual wage for workers in new and expanding firms. Using data from the Kansas Department of Commerce, we found it to be $18 thousand.[8] The most recently available data from the Kansas Department of Revenue show that for calendar year 1984, there were 147,612 Kansas individual income tax returns with an adjusted gross income in the $14 thousand to $20 thousand range. The average income tax liability for this range was $310.12. Using this average income tax payment, we estimate that the new jobholders in the firms that came to or expanded in Kansas because of the tax credit added $39,385 to Kansas individual income tax revenues. Using a 10 percent discount rate, this amounts to a present value of $242,005 over ten years. All of this type of revenue accrues to state government.

Property Tax Revenue

The Job Expansion and Investment Tax Credit also creates benefits by encouraging the accumulation of business capital in the state, thereby causing an increase in Kansas state and local property tax revenue. To estimate these benefits we determined the assessed value of capital investment by multiplying the value of capital investment due to the credit, $14,940,861, by the fiscal 1985 state average assessment ratio for real and tangible personal property, 10.44 percent.[9] Using the appropriate average tax rate of 11.51 percent,[10] we estimate that property tax revenue increased $179,536 in fiscal 1985 due to the tax credit. If we assume that the firm's business capital depreciates evenly over 15 years, then the present value of the changing property tax liability over ten years is $829,050. In fiscal 1985, 2.19 percent of this type of revenue went to the state, and 97.81 percent went to local governments.[11]

Another possible source of increased property tax revenue due to the Job Expansion and Investment Tax Credit results from new wage earners acquiring and paying taxes on new property. The categories of Kansas property taxes that are predominantly paid by individuals are rural homesites and subdivisions real estate, urban residential real estate, city and township personal property, and motor vehicle registration and taxes. Kansas per capita payment of these taxes for fiscal 1985 was $240.[12] We multiplied this per capita payment by the number of new jobs created to estimate that this type of tax revenue would have increased $30,480 because of the Job Expansion and Investment Tax Credit. In fiscal 1985, 12.4 percent of this revenue went to the state and 87.6 percent went to local government.[13] We used these percentages to divide the credit-induced increases in property tax and motor vehicle tax revenue among the political subdivisions.

Corporate Tax Revenue

The Job Expansion and Investment Tax Credit also leads to increases in Kansas business income tax revenue. We multiplied the number of firms qualifying for the credit in 1985 by the percentage of firms that were likely to find this tax incentive to be a significant factor in their site location, 3.3 percent. We then multiplied this number by the average corporate income tax liability for Kansas firms in fiscal 1985, $8,317,[14] to arrive at a very rough estimate of the total increase in annual Kansas business income tax revenue due to the credit, $41,585. The present value of the increase in business income tax revenue over ten years attributable to the Job Expansion and Investment Tax Credit Act is $255,523. State government receives all of this revenue.

Sales Tax Revenue

The Job Expansion and Investment Tax Credit may also lead to increases in state and local sales tax revenues as the new wage earners make personal consumption expenditures. To estimate this increase in revenue we use data made available by the Institute for Public Policy and Business Research's Kansas Dynamic Activity Analysis Model.[15] The model gives us total personal consumption expenditures and total value added from which we can calculate the average propensity of Kansans to consume from income: 63.22 percent. From the model we also know the total sales tax expenditures as a percentage of total personal consumption: 2.50 percent. Using these two percentages, we estimate the total increase in state and local sales tax revenue due to the Job Expansion and Investment Tax Credit to be $36,130, with a ten-year present value of $222,004. In fiscal 1985, 80 percent of sales tax revenue went to the state, and 20 percent went to local governments.[16]

Net Benefits of the Tax Credit at Different Response Rates

The costs and benefits of the Job Expansion and Investment Tax Credit are broken down in Table 3. Table 4 shows that if the credit was influential for 3.3 percent of the firms that claimed it, then the Job Expansion and Investment Tax Credit would not be cost-effective at either the state level, the local level, or both together. If we assume 10 percent of the expansion or location decisions were influenced by the credit, then, using the same estimation techniques discussed above, the credit would be cost-effective with state and local revenues combined. It would require a 19 percent rate of influence for the Job Expansion and Investment Tax Credit to be cost-effective at the state level alone.

. . . if the credit was influential for 3.3 percent of the firms that claimed it, then the Job Expansion and Investment Tax Credit would not be cost-effective at either the state level, the local level, or both together.

Table 3
Costs and Benefits of the Job Expansion and Investment Tax Credit at a 3.3 Percent Response Rate

	State	Local	State and Local
Costs			
For fiscal 1985	$ 663,891	– –	$ 663,891
Ten year present value*	4,079,345	– –	4,079,345
Benefits			
Business income tax revenue	41,585	– –	41,585
Property tax revenue (business property)†	3,932	175,604	179,536
Personal income tax revenue	39,385	– –	39,385
Sales tax revenue	28,908	7,222	36,130
Property tax revenue (individual's property)	3,780	26,700	30,480
Total fiscal 1985 benefits	117,590	209,526	327,116
Ten year present value*	716,539	1,019,331	1,735,870
Present value cost* ÷ present value benefit	5.69	4.00‡	2.35
Present value cost* less present value benefit*	3,362,806	3,060,014°	2,343,475

*Present value calculation assumes a 10 percent discount rate.
†Business property is assumed to depreciate evenly over 15 years.
‡Present value of cost to state divided by present value of benefits to locality.
°Present value of cost to state less present value of benefits to locality.

Costs and Benefits of the Kansas Sales Tax Refund on Manufacturing Machinery and Equipment

Forty-two out of the 50 states allow some kind of sales tax exemption or refund on machinery and equipment.[17] A comparison shows that the Kansas sales tax incentive is more restrictive than that of most surrounding states, since it is only a refund and not an exemption. (Effective July of 1987, the Kansas sales tax refund will change to an exemption for firms in Enterprise Zones but will remain a refund for firms outside Enterprise Zones.) In fiscal 1985 Kansas allowed a refund of sales tax paid on machinery and equipment for new or expanding manufacturing firms. New firms within a Kansas Enterprise Zone could receive a refund of sales tax paid on the purchase of tangible personal property or services used to construct or remodel a new facility (as long as the facility qualifies for the Job Expansion and Investment Tax Credit) and a refund on the purchase of equipment and machinery. This section of the article shows the costs and benefits to Kansas from the fiscal year 1985 sales tax refund.

Costs

The cost to the state for operation of the Kansas Sales Tax Refund during fiscal 1985 is defined as the total amount of sales tax refunded during fiscal 1985 to firms inside Enterprise Zones and during fiscal 1986 to firms outside Enterprise Zones. For firms outside Enterprise Zones, fiscal 1986 figures are used and discounted back to 1985 at 10 percent, because there is a one-year lag for refunds. The total cost of the refund incurred during fiscal 1985 was $448,180. For firms inside Enterprise Zones it was $294,970. For all other firms, the cost was $153,210, the 1985 present value of $168,548 paid out in fiscal 1986 using a 10 percent discount rate. In contrast to the Job Expansion and Investment Tax Credit, which allows firms qualifying in one year to take the credit for the next ten years, the costs of offering the sales tax refund for one year, in this case fiscal 1985, are paid out only once, either in the same or in the next year.

Benefits

The purpose of this refund is to induce firms to purchase equipment and increase employment in Kansas. If the refund is successful there will be resulting increases in economic activity in the state. As with the Job Expansion and Investment Tax Credit, the benefit to the state and local governments of the new jobs and capital is measured by the increase in tax revenues it brings about: increases in individual and corporate income tax revenues, property tax revenues from individual and business property, and sales tax revenues.

While the costs of the sales tax refund occur only once, the benefits would continue to accrue as long as the equipment and employment investments are still in place. For purposes of this study, we will arbitrarily assume that the benefits will continue for ten years. To estimate these benefits, one must first determine how

Table 4
Net Benefit of Job Expansion and Investment Tax Credit at Three Assumed Response Rates

	Percent of Firms Influenced by Tax Credit		
	3.3%	10%	19%
State	– 3,362,806	– 2,296,964	+ 107,374
Local	– 3,060,014	– 1,608,040	+ 1,789,222
State and Local	– 2,343,475	+ 174,350	+ 5,975,933

much labor and/or equipment was purchased by the firm in order to qualify for the sales tax refund given by the state in fiscal 1985. The total capital investment was calculated for firms inside and outside Enterprise Zones by taking the total refund granted and dividing it by the 1985 state sales tax rate of 3 percent. The results of this calculation indicate a capital investment of $9,832,333 inside Enterprise Zones and $5,618,267 outside Enterprise Zones. To determine the increase in labor concurrent with this capital investment, we assumed Enterprise Zone firms qualifying for the refund followed the estimated capital to labor ratio for Kansas new and expanding industry of one job for every $235,175 of capital investment.[18] Accordingly, 42 jobs were created along with the $9,832,333 capital investment inside Enterprise Zones. In order to qualify for the sales tax refund outside an Enterprise Zone, a minimum of two jobs must be created for every $50 thousand capital investment. Consequently, a minimum of 225 jobs were created along with the $5,618,267 capital investment outside an Enterprise Zone. Assuming a response rate of 3.3 percent, nine jobs were created and $509,870 worth of capital was invested in response to the refund.

The new output produced by the new jobs and capital investment will require increased use of intermediary goods. Additional labor will be required to supply this secondary demand. To measure the total amount of labor required, we again will use an employment multiplier of two. This means that, assuming a response rate of 3.3 percent, ultimately 18 jobs and $509,870 worth of capital were created as a response to the sales tax refund. The amount of capital and employment investment that can be attributed to the tax refund at different response rates is set out in Table 5.

The increases in tax revenues from the refund-induced increases in jobs and capital were estimated using the same models, studies, and methods employed above to find the benefits for the Job Expansion and Investment Tax Credit. However, the property tax revenues on

Table 5
Capital and Labor Investment in Kansas Due to the Sales Tax Refund

Investment Attributable to Refund	Response Rate Assumption†			
	100%	3.3%	8%	16%
Capital	$15,450,600	$509,870	$1,236,048	$2,472,096
Labor*	534	18	43	85

*Figures represent amount of new jobs created which qualify for refund plus an employment multiplier effect.
†Percent of firms claiming credit which found refund significant in their decision to locate in Kansas.

Table 6
Costs and Benefits of the Sales Tax Refund at a 3.3 Percent Response Rate

	State	Local	State and Local
Costs	$ 448,180	- -	$ 448,180
Benefits			
Business income tax revenue	8,317	- -	8,317
Property tax revenue (business property)†	337	15,069	15,406
Personal income tax revenue	5,582	- -	5,582
Sales tax revenue	4,097	1,024	5,121
Property tax revenue (individual's property)	536	3,784	4,320
Total Fiscal '85 benefits	18,869	19,877	38,746
Ten year present value*	115,430	99,126	214,556
Present value cost* ÷ present value benefit*	3.88	4.52‡	2.09
Present value cost* less present value benefit*	332,750	349,054°	233,624

*Present value calculation assumes a 10 percent discount rate.
†Business property is assumed to depreciate evenly over 15 years.
‡Present value of cost to state divided by present value of benefits to locality.
°Present value of cost to state less present value of benefits to locality.

. . . assuming a response rate of 3.3 percent, ultimately 18 jobs and $509,870 worth of capital were created as a response to the sales tax refund.

. . . costs incurred by the state for operation of the Job Expansion and Investment Tax Credit during fiscal 1985 were $4,079,345.

Table 7
Net Benefit of Sales Tax Refund at Three Assumed Response Rates

	Percent of Firms Responding to Tax Credit		
	3.3%	8%	16%
State	−332,750	−192,247	+34,640
Local	−349,054	−208,923	+28,705
State and Local	−233,624	+41,010	+511,525

business capital had to be calculated using a different assessment rate and mill levy than were applied to the capital purchased in response to the Job Expansion and Investment Tax Credit since real estate investment can qualify for a Job Expansion and Investment Tax Credit but not for a sales tax refund.

Net Benefits of the Sales Tax Refund

Table 6 shows the break-down of costs and benefits of the tax refund assuming that 3.3 percent of the business location decisions were influenced by the refund. Table 7 shows that an 8 percent response rate is necessary for the sales tax refund to be cost effective for the state and local government together. If the response rate is 16 percent, the tax credit will be cost effective even if we only count the resulting revenues to the state and not to the local governments, or vice-versa.

This study was carried out under the direction of Charles Krider, director of Business Research at the Institute for Public Policy and Business Research, for the Legislative Taskforce on Taxation and Capital Markets. Bill Mayer, a research assistant at the Institute, helped with this article.

Notes

[1] Kansas Statutes Annotated 79-32,153.

[2] Kansas Statutes Annotated 79-3641 and 79-3642.

[3] *Industrial Development* 155(5) and *Site Selection Handbook* 31(5), December 1986.

[4] An Enterprise Zone is a designated area of a city or county approved by the Secretary of the Kansas Department of Commerce. Business and industry are offered incentives to develop new business and expand existing business within the economically distressed zones and thereby create new jobs and sources of income. K.S.A. 12-17,107.

[5] *Kansas New and Expanding Manufacturers*, Kansas Department of Commerce, 1985.

[6] Larry C. Ledebur and David W. Rasmussen, "State Development Incentives" (Urban Institute Report, May 10, 1983) and George A. Reigeluth and Harold Wolman, "The Determinants and Implications of Communities Changing Competitive Advantages: A Review of Literature" (Urban Institute Report, January 9, 1979). Michael Kieschnick, *Taxes and Growth: Business Incentives and Economic Development* (Washington, DC: Council of State Planning Agencies, 1981). Roger Schmenner, "The Location Decisions of Large, Multi-Plant Companies," Mimeo, 1980. Barry M. Rubin and C. Kurt Zorn, "Sensible State and Local Economic Development," *Public Administration Review* (March/April):333-339 (1985). As sources supporting these conclusions, the authors cite: Michael Wasylenko, "The Location of Firms: The Role of Taxes and Fiscal Incentives," pp. 155-190 in Roy Bahl, ed., *Urban Government Finance* (Beverly Hills, CA: Sage Publications, 1981).

[7] Roger W. Schmenner, *Making Business Location Decisions* (Englewood Cliffs, NJ: Prentice-Hall Inc., 1982). Roger Vaughan, *The Urban Impacts of Federal Policies: Vol. 2, Economic Development* (Santa Monica: The Rand Corporation, June 1977).

[8] *Kansas New and Expanding Manufacturers*, Kansas Department of Commerce, 1985.

[9] *Statistical Report of Property Assessment and Taxation for the Tax Year 1985*, Kansas Department of Revenue, Division of Property Valuation, February 1986.

[10] *Property Assessment and Taxation, 1985.*

[11] Annual reports and records of the Department of Revenue, as compiled in Kansas Legislative Research Department Memorandum, Kansas Tax Facts 1985.

[12] *Property Assessment and Taxation, 1985.*

[13] Annual reports and records of the Department of Revenue, as compiled in Kansas Legislative Research Department Memorandum, Kansas Tax Facts 1985.

[14] Reports and records of the Corporation Income and Privilege Tax Section, Audit Services Bureau, Kansas Department of Revenue.

[15] The Activity Analysis Model for Kansas is a dynamic model based on input-output specifications for production and a non-linear adjustment process to describe investment.

[16] Annual reports and records of the Department of Revenue, as compiled in Kansas Legislative Research Department Memorandum, Kansas Tax Facts 1985.

[17] *Industrial Development* 155(5) and *Site Selection Handbook* 31(5), December 1986.

[18] *Kansas New and Expanding Manufacturers*, Kansas Department of Commerce, 1985.

. . . an 8 percent response rate is necessary for the sales tax refund to be cost effective for the state and local government together.

Economic Conditions

The National Review

National and international activity affects Kansans in a very real sense, since fluctuations in economic activity outside of Kansas cause fluctuations in the demand for Kansas products. This is especially true when we speak of agriculture, oil, aircraft and, perhaps to a lesser extent, the auto industry. Clearly, Kansas has very little effect, if any, on agricultural and oil prices: Kansas is a price-taker in a world market. The market for aircraft and autos is also international, but perhaps it is influenced by U.S. economic conditions.

In this article we will examine external conditions and what they tell us about the future of the Kansas economy. We will look at the Composite Index of 12 Leading Indicators for the U.S. economy; the relationship between the oil and gas industry in Kansas and OPEC oil prices; and the exchange rate of the dollar and agricultural exports.

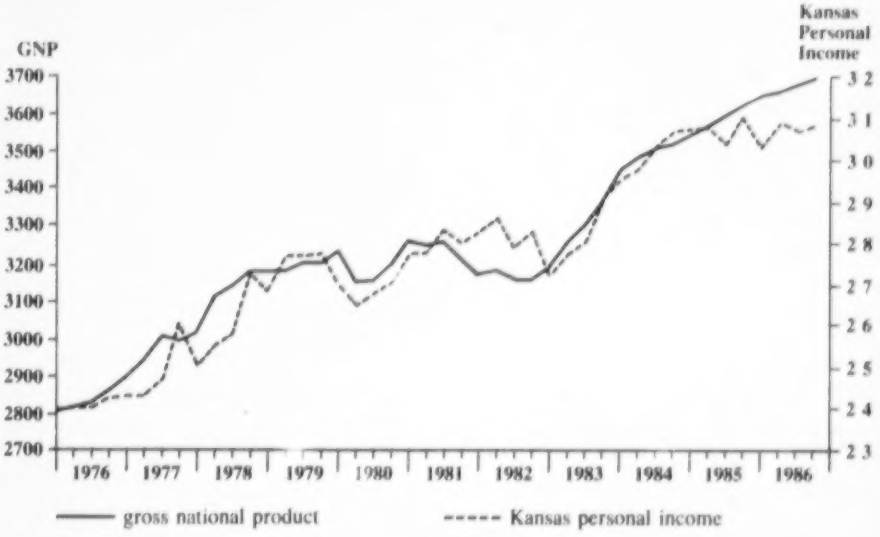
The Composite Index of Leading Indicators

Figure 1 shows that the relationship between overall economic activity in Kansas and the United States has been close in the recent decade. Since we would expect the causality to run from the nation to the region, we have to forecast what will happen nationally before we can forecast for Kansas. For this discussion we will concentrate on the Composite Index of 12 Leading Indicators, which the Bureau of Economic Analysis compiles monthly. Each one of the twelve economic variables has tended historically to lead (chronologically) general economic activity. Each variable tends to oscillate from month to month so that any one by itself would not be a good indicator of future economic activity. The combination of the variables, however, is a good indicator of what to expect in the economy. The Composite Index of Leading Indicators is expected to turn down several months prior to the beginning of a downturn in the economy and turn up several months prior to an economic expansion. For example, the downturn that began in January of 1980 was preceded by a downturn in the index that began in March 1979 (see the back inside cover). The components of the Composite Index of Leading Indicators are listed in Table 1.

Even though each component of the index is included primarily for statistical reasons, we can speculate on the economic reasoning behind most. The first two components reflect the labor market. Generally, when a manufacturing firm needs to adjust its output and thereby the man-hours used, the firm will adjust hours worked before adjusting the number of employees. There are two reasons for this: hours can generally be adjusted more quickly than employment, since it takes time to hire or fire an employee; and there are costs involved with changing the level of employment, so firms adjust hours first and wait to see if adjusting employment is really necessary. Thus, the average work week of production workers in manufacturing is a leading indicator. The average weekly initial claims for unemployment insurance in state programs is the other labor variable in the composite index. As the name implies, the series represents first claims filed by workers newly unemployed. The series would be an early indication of changes in employment trends.

Some of the components of the Composite Index of Leading Indicators represent commitments to economic activity in the future, and as such they are well-suited to the leading index. Contracts and

Figure 1
Kansas Personal Income and Gross National Product (in billions of 1982 dollars)



Sources: U.S. Department of Commerce, Bureau of Economic Analysis; Kansas Department of Human Resources.

Table 1
Components of the Composite Index of Leading Indicators

Hours of Average Workweek of Production Workers, Manufacturing
Average Number of Weekly Initial Claims for Unemployment Insurance, State Programs
Value of Manufacturing New Orders for Consumer Goods and Materials
Index of Net Business Formation
Index of 500 Common Stocks by Standard and Poor's
Contracts and Orders for Plant and Equipment
Index of New Private Housing Units Authorized by Local Building Permits
Vendor Performance: Percent Companies Reporting Slower Deliveries
Net Change in Inventories on Hand and on Order
Change in Sensitive Materials Price
Change in Credit, Business and Consumer Borrowing
M-2, Money Supply

orders for plant and equipment reflect decisions by firms to buy machines that must be built and that will go into production. The index of new private housing units authorized by local building permits is a leading indicator because building permits are the first step in construction activity, an important part of the economy; and the index of net business formation reflects that starting a business indicates that investment will occur and new employment opportunities will exist.

The inclusion of the Standard and Poor's Index of 500 Common Stocks is perhaps a reflection of the role of profits in the economy. Stock prices are a function of expected profits, and profits move with economic activity. Hence, stock price movements reflect investors' expectations of economic activity.

The amount of inventory that a firm holds is a reflection of the amount of demand it anticipates. But the net change in inventories on hand and on order not only indicates the expectations of the firm; it also reflects real activity. In a related fashion, vendor performance measures the percentage of companies reporting slower deliveries. Slow deliveries to purchasing agents is an area where increase in demand for goods first shows up. Another indication of a change in demand is change in sensitive materials price. This is computed from an index of spot market prices of raw industrial materials. A change in price is assumed to reflect a change in demand for materials, and since the demand for materials is dependent on the demand for the final product, the price is an early indication of demand for manufactured products.

The final two indicators, money supply (M-2) and change in credit, and business and consumer borrowing, reflect the availability of credit, which is necessary for the increased production, investment, and consumption associated with an expansion.

The value of an index of leading economic indicators is of course tied to the predictive capability of the index. Beginning in 1970 there have been four recessions. Three of the recessions occurred five months after the index declined three months in a row, the other recession occurred three months after the index declined three months in a row. This is a remarkable predictive record; every time the index has fallen three consecutive months, a recession has begun within three to five months. Fortunately, the index has not recently fallen three consecutive months.

The index did fall for two consecutive months in the second quarter of 1986 but rebounded well in July. The growth in the Index of Leading Indicators was actually quite large in 1986 compared with the growth in 1984 and 1985. In 1984 the index closed out the year at a lower level than it began the year; in 1985 the index moved from 166.3 to 173.7; and from January to December 1986 the growth was from 173.4 to 186.1.

Based upon this leading index, the forecast of the overall U.S. economy is positive, indicating that the demand for the exports of Kansas should remain strong. Nevertheless, some components of the economy of Kansas are more directly linked to international markets.

Kansas Oil and OPEC Prices

The oil industry and the agricultural industry in Kansas compete in a world market. By its nature, the oil industry in Kansas is responsive to price fluctuations. Kansas has more stripper wells than any other state (stripper wells produce less than ten barrels of oil a day), and the cost associated with getting a barrel of oil out of these wells is significant. The margin for profit in these wells is not comparable to some Middle Eastern wells where the cost of getting a barrel of oil out of the ground is around a dollar. When the price of oil declines, employment in the oil industry in Kansas will decline, as Figure 2 shows. Thus, a large export industry of Kansas and thereby a portion of the economic activity of Kansas is tied to the price of oil. Employment in oil and gas extraction in Kansas follows the movements in the oil import price quite closely. After the oil prices began to shoot up in 1979 employment in oil and gas extraction followed soon thereafter. The prices peaked in late 1980 and began a slow decline until late 1985 when prices dropped off. Employment followed the same pattern, peaking in 1981 at around 20 thousand and crashing to almost 10 thousand in 1986. OPEC has lost the ability to control output and prices, and we do not expect them to recover control. Low world oil prices will prevent the oil industry in Kansas from enjoying the importance it had during the early eighties.

The Exchange Rate and Agricultural Exports

The situations of the agricultural industry and the oil industry in Kansas are similar in that each is an important export base to the state. The fortunes of the agricultural industry in this country are related to the amount of agricultural products exported from the United States. The price of U.S. agricultural products in the world market relative to the price of agricultural products from around the world depends upon the exchange rate. When the exchange rate declines, so that

Figure 2
Indexed U.S. Oil Import Price and Kansas Employment in Petroleum and Gas Extraction

Sources: U.S. Department of Labor, Bureau of Labor Statistics; Kansas Department of Human Resources.

Figure 3
U.S. Agricultural Exports and the U.S. Composite Exchange Rate

Source: *Business Conditions Digest*, Board of Governors Federal Reserve System.

the U.S. goods in the world market become less expensive, agricultural exports should increase. As Figure 3 shows, the exchange rate fell rather steadily from the beginning of 1976 to early 1980, and during this time agricultural exports rose from around $1.75 billion to over $4 billion. This was a profitable time for American agriculture. In 1980 the value of the U.S. dollar began a steady increase in relation to currencies of ten leading nations. Between 1980 and 1984 the dollar's value increased 78 percent, and as one would expect, agricultural exports declined in this period. The puzzle is that, in spite of the dramatic fall in the exchange rate that began in late 1984, agricultural exports continued to decline. It is possible, as some economists contend, that there is a lag effect, and exports of agricultural products will begin to increase in the near future.

Summary

The index of leading indicators points to good growth in the near future, which will be good for Kansas, especially the aircraft and auto industries. The two-month downturn in the Composite Index of Leading Indicators in the second quarter foreshadowed the lackluster growth in the fourth quarter of 1986. Based upon the exchange rates, there is hope that exports of agricultural products will turn up in the future. World oil prices, however, will continue to be low, offering no hope to the Kansas oil industry.

Gary R. Albrecht
Research Associate
Institute for Public Policy and Business Research

References

"A Descriptive Analysis of Economic Indicators," Ronald A. Ratti, *Federal Reserve Bank of St. Louis Review*, 67(1) January 1985.

Geoffry H. Moore, *Business Cycles, Inflation, and Forecasting*, National Bureau of Economic Research Studies in Business Cycles No. 24, 2nd ed. (Ballinger Publishing Company, 1984).

The Kansas Economy

In 1979 the Kansas Department of Economic Development published a report showing the concentration of industry in Kansas by county and by economic sector. The data used were from 1977. This article will update the 1979 article using recently published 1984 data.

Changes in Production

Gross National Product (GNP) measures the value of goods and services produced in a country. The Department of Commerce has identified the contribution that various industry sectors make to GNP. Gross State Product (GSP) measures the value of goods and services produced by the industries within the state and has been divided by industry categories also. Table 1 shows what part each sector contributed to GNP and GSP for 1977 and 1984.

Table 1
Gross Product by Sector

Sector	US % of GNP 1977	US % of GNP 1984	KS % of GSP 1977	KS % of GSP 1984
Agriculture	3.0	2.5	7.1	5.7
Mining	2.7	3.2	3.1	4.3
Construction	4.5	4.0	5.2	4.1
Manufacturing	24.2	21.2	20.7	17.9
Transportation	3.8	3.5	5.1	5.0
Communication	2.6	2.8	2.2	2.7
Electric,gas,sanitation	2.5	3.0	2.9	3.8
Wholesale and retail trade	17.5	16.4	19.1	15.9
FIRE	14.0	16.3	12.9	14.5
Services	12.5	14.4	8.0	13.5
Government	12.6	11.5	13.0	11.7

Sources: *Development Perspective 1978-1979*, KDED. *Survey of Current Business*, April 1985. *Kansas Statistical Abstract, 1985-1986.*

As can be seen for both Kansas and the United States as a whole, the percentage of gross product produced by agriculture, construction, manufacturing, transportation, and wholesale and retail trade declined during the seven years between 1977 and 1984. On the other hand, the contribution to gross product by the communication, the utilities (electric, gas, and sanitation), and the mining sectors increased (the Standard Industrial Classification code includes the oil industry in the category of mining). Finance, insurance, and real estate (FIRE) and the service sector have increased their share of gross product for both Kansas and the United States, which fits well with the general notion that our economy is becoming more of a service economy. This seems to hold for both the United States and Kansas.

Changes in Employment

From 1977 to 1984 total employment in the state increased by 16.3 percent. As can be seen in Table 2, however, every sector did not share this growth in employment. The largest increases in employment were in agriculture, which employed 43.2 percent more people in 1984 than it did in 1977, and mining, which employed 53.4 percent more workers. Construction employed 16.2 percent fewer people. Manufacturing grew, but not very much when compared with the growth in employment of the other industry categories. How could agriculture enjoy such a large increase in employment while it represented a declining portion of GSP? It should be remembered that both GSP and GNP are measured as the value of goods and services produced, so if prices are dropping by more than any increase in output in absolute terms, then output for the sector will not be recorded as an increase in production measured in dollars. Further, although agriculture employed more people, in 1984 it still only represented 0.38 percent of the total employed in Kansas.

Table 2
Percent Change in Kansas Employment by Sector 1977-1984

Total employment	+ 16.3%
Agriculture	+ 43.2
Mining	+ 53.4
Construction	– 16.2
Manufacturing	+ 6.8
Transportation	+ 20.1
Wholesale Trade	+ 8.2
Retail Trade	+ 12.1
FIRE	+ 26.3
Services	+ 34.4

Next we will consider how concentrated the employment in various counties is by looking at the top five counties in each sector. Table 3 shows the five counties with the most workers in each sector.

Of all Kansas counties, Johnson County employed the most agricultural workers in 1977, and again in 1984 it leads the list. This may seem incongruous as Johnson County is part of a metropolitan area. However, the Department of Commerce includes veterinary services and landscape and horticultural services in the agricultural sector as agricultural services. In 1984 more than half of those counted as being employed in agricultural services in

Table 3
Share of Sector Employment by County in Kansas

1977		1984	
Agriculture			
1. Johnson	16.67%	1. Johnson	24.21%
2. Sedgwick	11.24	2. Sedgwick	12.16
3. Barton	4.49	3. Shawnee	6.10
4. Shawnee	3.06	4. Barton	2.31
5. Ford	2.96	5. Douglas	2.31
Mining			
1. Sedgwick	28.03%	1. Sedgwick	30.60%
2. Barton	7.00	2. Barton	7.25
3. Montgomery	3.15	3. Russell	3.69
4. Butler	2.86	4. Seward	2.94
5. Rice	2.31	5. Neosho	2.57
Construction			
1. Sedgwick	23.26%	1. Sedgwick	22.10%
2. Johnson	13.27	2. Johnson	16.87
3. Wyandotte	9.81	3. Wyandotte	9.44
4. Shawnee	6.90	4. Shawnee	8.21
5. Reno	5.85	5. Reno	3.38
Manufacturing			
1. Sedgwick	26.56%	1. Sedgwick	31.68%
2. Wyandotte	12.50	2. Johnson	11.70
3. Johnson	9.30	3. Wyandotte	10.05
4. Shawnee	6.05	4. Shawnee	4.86
5. Reno	4.02	5. Reno	3.16
Transportation			
1. Sedgwick	20.07%	1. Sedgwick	19.74%
2. Wyandotte	11.67	2. Johnson	13.17
3. Johnson	8.96	3. Wyandotte	12.62
4. Shawnee	7.92	4. Shawnee	7.98
5. Seward	4.23	5. Franklin	4.69
Wholesale Trade			
1. Sedgwick	19.04%	1. Sedgwick	20.66%
2. Johnson	14.96	2. Johnson	19.29
3. Wyandotte	11.02	3. Wyandotte	10.42
4. Shawnee	7.90	4. Shawnee	6.22
5. Saline	3.86	5. Reno	3.20
Retail Trade			
1. Sedgwick	19.38%	1. Sedgwick	19.68%
2. Johnson	13.33	2. Johnson	16.72
3. Shawnee	7.74	3. Shawnee	8.46
4. Wyandotte	6.46	4. Wyandotte	5.77
5. Reno	3.54	5. Douglas	3.34
Finance, Insurance, and Real Estate			
1. Johnson	19.45%	1. Johnson	25.71%
2. Sedgwick	19.33	2. Sedgwick	19.88
3. Shawnee	13.22	3. Shawnee	11.05
4. Wyandotte	5.82	4. Wyandotte	5.55
5. Reno	2.90	5. Riley	2.03
Services			
1. Sedgwick	23.41%	1. Sedgwick	22.75%
2. Johnson	11.27	2. Johnson	15.91
3. Shawnee	10.52	3. Shawnee	10.49
4. Wyandotte	7.88	4. Wyandotte	6.67
5. Saline	3.10	5. Saline	2.87

Sources: County Business Patterns, 1984 and 1977, Kansas. U.S. Department of Commerce, Bureau of the Census.

Johnson County were actually employed in the subcategory of landscape and horticultural services. Sedgwick County kept its second place and grew, while Shawnee moved into third place almost doubling its share of total agricultural employment. As would be expected, many counties have small percentages of agricultural employment. For example in 1984 Riley, Geary, Phillips, Decatur, Thomas, Wichita, Stanton, and Ford each had 1.72 percent of the total agricultural employment in the state. Fifty percent of the state's agricultural workers are in about five counties.

The mining sector, which includes oil and gas extraction, increased its share of GSP and employed more people, as we have seen. In 1977 it employed 1.95 percent of the total work force, while in 1984 employment rose to 2.57 percent. By counties, Sedgwick and Barton increased their percentages and retained their places. Russell, however, moved from having near 1 percent to hiring 3.69 percent of those working in mining, and it replaced Montgomery as the county employing the third largest number.

Over the seven-year-period, the number of workers employed in construction declined from 7.14 percent of the total employment in the state to 5.15 percent. Sedgwick County maintained its position of having the largest number of construction workers in the state, although it did decline slightly. Johnson County, on the other hand, grew as did Shawnee and Douglas counties, indicating that in these counties building activity increased over the seven years.

While manufacturing in the state as a whole employed a smaller percentage of workers, Sedgwick and Johnson counties increased their percentage of the total employed in manufacturing, with Johnson County replacing Wyandotte as having the second highest percentage of manufacturing employees in the state. Further, it should be noted that in 1984 over 53 percent of Kansas manufacturing employees were located in three counties: Wyandotte, Johnson, and Sedgwick.

Transportation is little changed in its share of total state employment, but Table 3 shows Johnson County again replaced Wyandotte in ranking, increasing its share of employment in this sector by much more than Wyandotte did. Franklin County moved from not being ranked to having the fifth largest concentration of transportation workers in the state.

Wholesale trade is little changed in geographical distribution of employment except for Johnson County, which increased its percentage of Kansans employed in this sector too. There is not much change in most of the counties, and the top three counties employ 50 percent of the wholesale trade sector. Retail trade is little changed at the state level. Sedgwick retained its number-one position and Johnson County grew a little. Shawnee County retained its number-three position. Douglas County also increased its share of employment in this sector, possibly reflecting a growing shopping area.

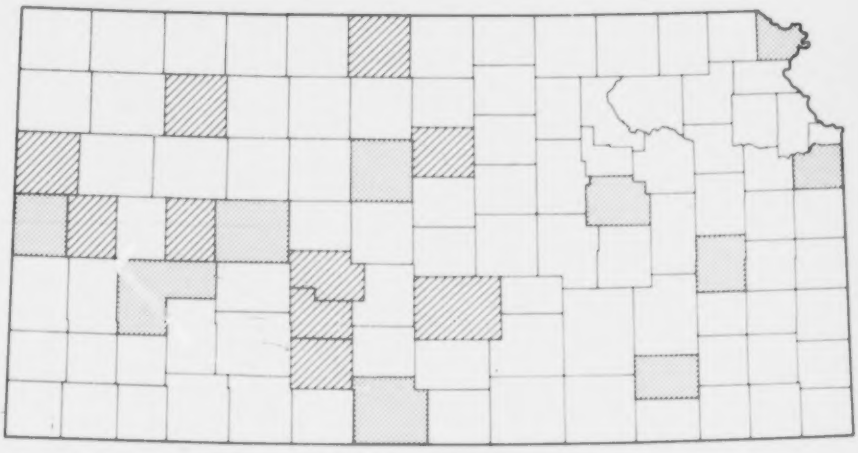
Finance, insurance, and real estate employed slightly more people in the state, but the concentration of these employees shifted to Johnson County, which in 1977 employed roughly one-fifth of the total and in 1984 employed a quarter of the total. Again, we can see that in both years the top four counties employed about 50 percent of the total workers in this sector.

The service sector employed a larger percentage in 1984, and the rankings remained about the same. Again, however, Johnson County has increased its proportion of the total, while Wyandotte declined in its share of employment in the service sector.

Counties With the Largest Changes in Employment

Figure 1 indicates the percentage changes in employment from 1977 to 1984, ranking the ten largest positive changes and the ten largest negative changes. Ness and Coffey enjoyed the largest percentage increase in employment. Johnson County is third with a 52.7 percent increase. This large increase for Johnson County may account for its growth in several sectors, particularly in the sectors where it replaced Wyandotte's ranking by taking a larger proportion of total employment. Wyandotte demonstrated almost no growth in employment with a 0.4 percent increase. So, while Wyandotte remained almost stationary, its neighbor was the third-fastest growing county in terms of employment. Compare the large growth of the top ten counties to the state average of 16.3 percent. To balance this out, some counties did not grow at all, and in fact, several suffered large declines in employment with Pawnee experiencing the worst decline, −15.4 percent. A further study will investigate the concentration of each sector in each county. Pawnee, for example, in 1977 had 6.65 percent of its workers in construction and 12.09 percent in manufacturing, both of which suffered statewide and nationwide declines in employment. Also, some counties are experiencing population changes that need to be considered.

Figure 1
Twenty Kansas Counties With the Largest Changes in Employment, 1977-1984



Gaining employment Losing employment

Counties			
1. Ness	+84.6%	1. Pawnee	−15.4%
2. Coffey	+75.8	2. Kiowa	−14.6
3. Johnson	+52.7	3. Lincoln	−13.9
4. Finney	+51.3	4. Smith	−13.3
5. Barber	+49.8	5. Wichita	−11.3
6. Elk	+42.3	6. Edwards	−10.7
7. Morris	+40.6	7. Lane	−9.4
8. Doniphan	+33.9	8. Wallace	−9.0
9. Russell	+31.2	9. Reno	−8.2
10. Greeley	+30.4	10. Sheridan	−8.0
Kansas Total	**+16.3%**		

Conclusion

In a 1982 article in this review, Robert Glass identified 19 counties in what he called "the Loop," which is the group of counties in the triangle traversed by the interstate highways from eastern Kansas west to Salina, south to Wichita, and back north to eastern Kansas. He noted that although the Loop includes only 19 of Kansas's 105 counties, it contains 62 percent of Kansans, who earn 65 percent of Kansas personal income.

Comparing the 1977 and 1984 county business patterns, we find that although the relative positions of some of the top five counties of each sector have changed, most Kansas employment remains in the same five major counties, which are part of the Loop. Finney, Ford, and Barton counties, located well west of the Loop, are like outposts with their clusters of employment concentration in some sectors. The trend in employment, however, is toward concentration in the Loop, particularly in the eastern portion of Kansas.

The most notable change over the seven-year period is in Johnson County, which grew in total employment and captured a larger share of the state's total employment in each sector.

We also see that 50 percent of total state employment in almost every sector is located in the top five counties. This concentration of employment has implications for economic development policy. Further, the location of employment centers along the Loop of interstates has implications for transportation that require further consideration.

These data show clearly that employment is concentrated in a few counties and in the Loop, and that eastern Kansas is growing faster than the rest of the state.

Frank Hefner
Research Assistant
Institute for Public Policy and Business Research

References

County Business Patterns, 1977, 1984, Kansas. U.S. Department of Commerce.

Development Perspective, 1978-1979. Vols. 1 and 2. Kansas Department of Economic Development, January 1979.

Glass, Robert. "Age Structure and Economic Growth in Kansas." *Kansas Business Review* 6(2):6-10 (1982).

"Gross Product by Industry, 1984." *Survey of Current Business, April 1985.* U.S. Department of Commerce.

Kansas Statistical Abstract, 1985-1986. Institute for Public Policy and Business Research.

Economic Indicators

TABLE ONE: ECONOMIC INDICATORS

Comparison Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Quarterly, at annual rates, SA						
Kansas - Mil. $	3rd	34957	35212	33680	-0.72	3.79
United States - Bil.$	4th	3529.60	3498.87	3382.87	0.88	4.34
B. Employment - Quarterly						
Kansas - Thou., NSA	4th	1168.03	1177.10	1179.40	-0.77	-0.96
United States - Mil., SA	4th	110.40	110.00	107.97	0.36	2.25
C. Unemployment Rate - Quarterly						
Kansas - % NSA	4th	5.5	5.3	5.1		
United States - % SA	4th	6.8	6.9	7.0		
D. Retail Sales - Monthly, at annual rates						
Kansas - Mil. $, NSA	DEC	2540.00	970.00	1623.33	161.86	56.47
United States - Bil. $, SA	DEC	126.60	121.10	116.70	4.54	8.48
E. Consumer Price Index, CPI-U, All items - Monthly, SA						
Kansas City* - 1967 = 100	OCT	323.70	323.90	323.10	-0.06	0.19
United States - 1967 = 100	DEC	331.50	330.70	327.90	0.24	1.10
Kansas Indicators						
F. New Incorporations - Quarterly, NSA						
For Profit - Number	3rd	326.33	362.67	398.00	-10.02	-18.01
G. Tax Revenue, Quarterly, NSA						
General Fund Tax Revenue - Mil. $	4th	148.73	132.63	133.77	12.14	11.19
H. Operating Expenditures, Quarterly, NSA						
General Fund Operating Expenditures - Mil. $	4th	152.67	101.57	141.67	50.31	7.76

NOTES: *The Kansas City CPI-U is published bimonthly starting with February.
National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not Seasonally Adjusted.
SA-Seasonally Adjusted.

SOURCE: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept. of Revenue.

TABLE TWO: NATIONAL INDICATORS
(Seasonally Adjusted)

General Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Income Measures - Quarterly, at annual rates						
Gross National Product - Bil. 82$	4th	3698.30	3686.40	3622.30	0.32	2.10
Disposable Personal Income - Bil. 82$	4th	2596.63	2605.63	2540.70	-0.35	2.20
Personal Consumption - Bil. 82$	4th	2447.40	2448.00	2351.70	-0.02	4.07
Gross Private Investment - Bil. 82$	4th	631.70	651.30	653.20	-3.01	-3.29
Net Export of Goods and Services - Bil. 82$	4th	-151.10	-163.30	-132.00		
Government Purchases - Bil. 82$	4th	770.30	750.40	749.40	2.65	2.79
Savings Rate - %	4th	2.57	3.03	4.33		
B. Labor Force - Monthly						
Civilian Labor Force - Mil.	DEC	118.60	118.70	116.30	-0.08	1.98
Employed - Mil.	DEC	110.60	110.40	108.10	0.18	2.31
Unemployed - Mil.	DEC	7.90	8.20	8.20	-3.66	-3.66
Unemployment Rates - percent						
All -	DEC	6.70	6.90	7.00		
Women -	DEC	6.70	6.90	7.30		
Men -	DEC	6.70	6.90	6.80		
Teens -	DEC	17.30	18.20	19.00		
Blacks and other than white -	DEC	12.30	12.70	13.50		
Whites -	DEC	5.80	6.00	6.00		
C. General Business - Quarterly						
Industrial Production - 1977 = 100	4th	123.40	123.60	123.30	-0.16	0.08
Mfg. and Trade Sales - Bil. 82$	4th	431.53	429.33	414.10	0.51	4.21
Mfg. and Trade Inventories - Bil. 82$	4th	644.73	646.29	638.27	-0.24	1.01
New Orders, Durable Goods - Bil. 82$	4th	99.12	98.69	98.36	0.43	0.78
Capacity Utilization, Mfg. %	4th	79.80	79.70	79.90		
New Housing Starts, Private - Tho.	4th	1700.67	1758.33	1796.67	-3.28	-5.34
D. Prices - Monthly						
Consumer Prices - 1967 = 1009						
CPI-U, All Items	DEC	331.50	330.70	327.90	0.24	1.10
Food	DEC	327.20	361.60	356.20	-9.51	-8.14
Housing	DEC	362.60	361.60	356.20	0.28	1.80
Apparel	DEC	210.30	210.30	208.30	0.00	0.96
Transportation	DEC	304.60	303.80	323.90	0.26	-5.96
Medical	DEC	447.70	444.40	415.70	0.74	7.70
Producer Prices - 1967 = 100 (NSA)						
All Commodities	DEC	298.10	298.70	310.20	-0.20	-3.90
Industrial Commodities	DEC	309.30	309.80	325.10	-0.16	-4.86
Crude Materials	DEC	274.80	278.40	304.30	-1.29	-9.69
Capital Equipment	DEC	310.10	310.50	303.70	-0.13	2.11
Agricultural Prices - 1977 = 100						
Prices Received	DEC	121.00	124.00	128.00	-2.42	-5.47
Prices Paid	DEC	158.00	158.00	162.00	0.00	-2.47
E. Monetary and Credit Aggregates - Quarterly						
(Annual rates of change, seasonally adjusted in percent.)						
Total Reserves -	4TH	21.50	22.90	12.50		
M1	4TH	17.20	17.30	10.70		
Commercial Banks:						
Savings -	4TH	38.50	25.50	3.20		
Small Denomination Time -	4TH	-12.10	-9.00	-1.60		
Large Denomination Time -	4TH	0.00	-2.70	14.10		
Thrift Institutions:						
Savings -	4TH	23.70	23.60	7.50		
Large Denomination Time -	4TH	-8.90	2.70	5.20		
Debt Components:						
Federal -	4TH	12.60	14.50	13.70		
Nonfederal -	4TH	11.20	11.20	13.10		
Interest Rates - Monthly						
Prime Rate - %	DEC	7.50	7.50	9.50		
Discount Rate - %	DEC	5.50	5.50	7.50		

SOURCES: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

TABLE THREE: EMPLOYMENT IN KANSAS

Category		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. General Indicators - Quarterly						
Civilian Labor Force - Tho.	4th	1235.67	1242.53	1242.87	-0.55	-0.58
Employed - Tho.	4th	1168.03	1177.10	1179.40	-0.77	-0.96
Farm Employment - Tho.	4th	56.33	74.17	51.07	-24.04	10.31
Unemployed Tho.	4th	67.63	65.40	63.30	3.41	6.85
Initial Claims for Unemployment Insurance - Tho.	4th	16.86	13.16	16.54	28.08	1.90
Average Work Week, Mfg. - Hrs.	4th	40.50	40.13	39.93	0.91	1.42
B. Industry Employment - Quarterly, in thousands						
All Industries -	4th	1005.30	990.30	992.17	1.51	1.32
Manufacturing -	4th	173.23	175.33	176.60	-1.20	-1.91
Durable Goods -	4th	103.67	104.70	103.97	-0.99	-0.29
Fabricated Metal Production -	4th	11.60	11.87	12.30	-2.25	-5.69
Machinery (incl. Elec.) -	4th	25.40	25.97	25.37	-2.18	0.13
Transport. Equip. -	4th	45.93	45.30	45.13	1.40	1.77
Nondurable Goods -	4th	69.53	70.63	72.63	-1.56	-4.27
Food and Kindred Prod. -	4th	26.47	26.57	27.53	-0.38	-3.87
Meat Products -	4th	12.87	13.00	14.17	-1.03	-9.18
Printing and Publishing -	4th	17.23	17.57	17.50	-1.90	-1.52
Petroleum and Coal -	4th	2.90	3.37	3.13	-13.86	-7.45
Mining -	4th	11.77	11.33	16.73	3.82	-29.68
Oil and Gas Extraction -	4th	10.20	9.67	15.13	5.52	-32.60
Contract Construction -	4th	43.57	47.40	42.17	-8.09	3.32
Trans. and Public Utilities -	4th	64.77	64.30	64.40	0.73	0.57
Wholesale Trade -	4th	65.70	66.23	66.77	-0.81	-1.60
Retail Trade -	4th	189.80	184.83	184.23	2.69	3.02
Finance, Ins., and Real Estate -	4th	54.73	55.07	52.97	-0.61	3.34
Services	4th	197.40	195.93	195.13	0.75	1.16
Federal Government -	4th	28.13	28.43	27.00	-1.06	4.20
State and Local Government -	4th	175.93	161.43	166.17	8.98	5.88

SOURCES: BLS, Ks. Dept. of Human Resources

TABLE FOUR: KANSAS RETAIL SALES SUBJECT TO SALES TAX
(At Annual Rates)

Account		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Business Classification - Quarterly, in Millions						
Apparel -	4th	50.69	41.41	37.76	22.40	34.25
Automotive -	4th	350.23	318.10	249.11	10.10	40.59
Food -	4th	438.75	405.37	321.86	8.23	36.32
Furniture -	4th	95.32	79.91	74.07	19.28	28.69
General Merchandise -	4th	298.83	228.02	197.91	31.05	51.00
Lumber and Building Materials -	4th	142.81	129.97	106.97	9.88	33.50
Prof. and Pers. Service -	4th	99.07	86.49	76.34	14.54	29.78
Public Utilities -	4th	82.18	84.86	65.08	-3.17	26.27
Unclassified -	4th	159.94	134.50	115.51	18.91	38.47
Farm and Garden Products -	4th	1.71	1.56	1.13	9.78	50.64
Manufacturing and Trading -	4th	106.59	96.20	94.86	10.80	12.37
Miscellaneous -	4th	5.76	5.23	6.09	10.20	-5.42
Total -	4th	1824.16	1611.24	3980.57	13.21	-54.17

NOTE: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

SOURCES: Ks. Dept. of Revenue.

TABLE FIVE: INCOME IN KANSAS
(Seasonally Adjusted, at Annual Rates)

Account		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Quarterly						
Total - Mil. $	3rd	34957	35212	33680	-0.72	3.79
Nonfarm Income - Mil. $	3rd	34155	33804	32856	1.04	3.95
Farm Income - Mil. $	3rd	802	1409	824	-43.08	-2.67
Average Weekly Earnings, Mfg.* - $	3rd	391.05	387.53	378.41	0.91	3.34
B. Earnings by Industry - Quarterly, in Millions						
Nonfarm -	3rd	23806	23379	22592	1.83	5.37
Farm -	3rd	802	1409	824	-43.08	-2.67
Manufacturing -	3rd	4733	4714	4647	0.40	1.85
Durable Goods -	3rd	2960	2930	2920	1.02	1.37
Nondurable Goods -	3rd	1773	1784	1726	-0.62	2.72
Mining -	3rd	322	353	482	-8.78	-33.20
Contract Construction -	3rd	1676	1601	1459	4.68	14.09
Trans. and Public Utilities -	3rd	2182	2138	2061	2.06	5.87
Wholesale Trade -	3rd	1720	1724	1706	-0.23	0.82
Retail Trade -	3rd	2414	2365	2317	2.07	4.19
Finance, Ins., and Real Estate -	3rd	1447	1406	1336	2.92	8.31
Services -	3rd	4408	4706	4484	-6.33	-1.69
Federal Government -	3rd	730	718	693	1.67	5.34
State and Local Government -	3rd	3073	2920	2703	5.24	13.69

NOTE: *Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SIX: KANSAS AGRICULTURAL INDICATORS

Item		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Prices Received - Monthly						
All Farm Products - 1977 = 100	DEC	135	136	147	-0.74	-8.16
All Crops - 1977 = 100	DEC	94	94	127	0.00	-25.98
Wheat - $/Bu.	DEC	2.26	2.27	3	-0.44	-24.67
Sorghum Grain - $/Cwt.	DEC	2.27	2.27	3.58	0.00	-36.59
Corn - $/Bu.	DEC	1.57	1.55	2.42	1.29	-35.12
Soybeans - $/Bu.	DEC	4.38	4.51	4.93	-2.88	-11.16
All Hay - $/Ton	DEC	51.00	48.00	50.00	6.25	2.00
Livestock and Products - 1977 = 100	DEC	160	162	159	-1.23	0.63
All Beef Cattle - $/Cwt.	DEC	58.30	59.10	59.00	-1.35	-1.19
Steers and Heifers - $/Cwt.	DEC	60.80	60.90	61.10	-0.16	-0.49
Calves - $/Cwt.	DEC	64.50	63.50	59.20	1.57	8.95
Hogs - $/Cwt.	DEC	50.80	51.80	44.60	-1.93	13.90
Milk - $/Cwt.	DEC	13.90	13.90	13.60	0.00	2.21

SOURCE: Ks. Crop and Livestock Reporting Service.

NOTE: *Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SEVEN: EMPLOYMENT AND SALES FOR SMSAs AND COUNTIES

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Wichita SMSA - Quarterly						
Civilian Labor Force - Tho	4th	225.07	225.30	234.90	-0.10	-4.19
Employed - Tho	4th	211.37	211.63	222.10	-0.13	-4.83
Unemployed - Tho	4th	13.67	13.63	12.80	0.24	6.77
Rate - %	4th	6.07	6.03	5.43		
Retail Sales - Mil. $	4th	366.59	318.31	267.12	15.17	37.23
B. Kansas Portion of Kansas City SMSA - Quarterly						
Civilian Labor Force - Tho	4th	302.23	302.10	273.93	0.04	10.33
Employed - Tho	4th	289.63	290.57	261.67	-0.32	10.69
Unemployed - Tho	4th	12.60	11.53	12.27	9.25	2.72
Rate - %	4th	4.20	3.83	4.50		
Retail Sales - Mil. $	4th	403.84	368.72	300.44	9.53	34.42
C. Topeka SMSA - Quarterly						
Civilian Labor Force - Tho	4th	86.77	87.13	87.40	-0.42	-0.72
Employed - Tho	4th	82.37	82.87	82.80	-0.60	-0.52
Unemployed - Tho	4th	4.40	4.27	4.63	3.13	-5.04
Rate - %	4th	5.03	4.90	5.33		
Retail Sales - Mil. $	4th	134.35	117.82	98.75	14.03	36.05
D. Lawrence SMSA - Quarterly						
Civilian Labor Force - Tho	4th	39.13	37.10	37.87	5.48	3.35
Employed - Tho	4th	37.77	35.70	36.47	5.79	3.56
Unemployed - Tho	4th	1.33	1.40	1.40	-4.76	-4.76
Rate - %	4th	3.47	3.80	3.73		
Retail Sales - Mil. $	4th	48.01	39.44	32.64	21.73	47.10
E. Riley County--Manhattan Area - Quarterly						
Civilian Labor Force - Tho	4th	27.53	26.17	23.77	5.22	15.85
Employed - Tho	4th	26.60	25.37	22.87	4.86	16.33
Unemployed - Tho	4th	0.97	0.80	0.87	20.83	11.54
Rate - %	4th	3.50	3.07	3.63		
Retail Sales - Mil. $	4th	23.32	22.06	18.39	5.72	26.77
F. Reno County--Hutchinson Area - Quarterly						
Civilian Labor Force - Tho	4th	31.90	32.33	32.37	-1.34	-1.44
Employed - Tho	4th	29.00	29.77	30.33	-2.58	-4.40
Unemployed - Tho	4th	2.87	2.53	2.03	13.16	40.98
Rate - %	4th	9.03	7.83	6.33		
Retail Sales - Mil. $	4th	46.49	38.95	36.34	19.38	27.95
G. Crawford County--Pittsburg Area - Quarterly						
Civilian Labor Force - Tho	4th	16.87	16.73	17.00	0.80	-0.78
Employed - Tho	4th	15.77	15.63	15.97	0.85	-1.25
Unemployed - Tho	4th	1.10	1.10	1.03	0.00	6.45
Rate - %	4th	6.43	6.57	6.13		
Retail Sales - Mil. $	4th	18.87	15.82	13.65	19.30	38.28
H. Lyon County--Emporia Area - Quarterly						
Civilian Labor Force - Tho	4th	19.47	19.03	19.13	2.28	1.74
Employed - Tho	4th	18.47	17.97	18.07	2.78	2.21
Unemployed - Tho	4th	1.00	1.07	1.03	-6.25	-3.23
Rate - %	4th	5.17	5.57	5.50		
Retail Sales - Mil. $	4th	23.49	19.36	15.87	21.32	48.02
I. Saline County--Salina Area - Quarterly						
Civilian Labor Force - Tho	4th	25.80	26.03	27.00	-0.90	-4.44
Employed - Tho	4th	24.20	24.50	25.23	-1.22	-4.10
Unemployed - Tho	4th	1.60	1.53	1.77	4.35	-9.43
Rate - %	4th	6.20	5.87	6.50		
Retail Sales - Mil. $	4th	43.12	38.04	30.03	13.35	43.60
J. Barton County--Great Bend Area - Quarterly						
Civilian Labor Force - Tho	4th	17.07	17.57	19.70	-2.85	-13.37
Employed - Tho	4th	15.43	15.60	18.73	-1.07	-17.62
Unemployed - Tho	4th	1.63	1.97	0.90	-16.95	81.48
Rate - %	4th	9.53	11.03	4.67		
Retail Sales - Mil. $	4th	24.23	21.35	24.51	13.52	-1.13
K. Montgomery County--Coffeyville Area - Quarterly						
Civilian Labor Force - Tho	4th	17.23	17.33	314.13	-0.58	-94.51
Employed - Tho	4th	15.83	16.00	17.60	-1.04	-10.04
Unemployed - Tho	4th	1.33	1.33	1.33	0.00	0.00
Rate - %	4th	7.87	7.77	7.00		
Retail Sales - Mil. $	4th	22.49	19.67	16.25	14.34	38.43

SOURCE: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

TABLE EIGHT: BANKING ACTIVITY IN KANSAS*

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Federal Reserve Member Banks						
Kansas - Quarterly, in Millions						
Total Deposits -	4th	31439.7	30081.0	29364.0	4.52	7.07
Total Checkable -	4th	5704.0	5398.3	5270.0	5.66	8.24
Demand Deposits -	4th	3112.7	2978.0	3019.3	4.52	3.09
Other Checkable -	4th	2591.3	2420.3	2250.7	7.07	15.14
Small Time and Savings -	4th	21383.0	20571.7	20262.0	3.94	5.53
Large Time -	4th	4352.7	4134.3	3847.0	5.28	13.14
Kansas City, KS - Quarterly, in Millions						
Total Loans -	4th	568.43	536.50	457.20	5.95	24.33
Real Estate -	4th	213.33	178.77	131.80	19.34	61.86
Commercial and Industrial -	4th	182.57	173.67	140.93	5.12	29.54
Consumer -	4th	50.60	50.10	47.93	1.00	5.56
Total Deposits -	4th	630.77	597.33	522.40	5.60	20.74
Demand Deposits -	4th	119.60	110.50	105.00	8.24	13.90
Time and Savings -	4th	319.53	306.43	232.23	4.27	37.59
Topeka - Quarterly, in Millions						
Total Loans -	4th	336.97	333.07	360.40	1.17	-6.50
Real Estate -	4th	93.10	85.13	94.40	9.36	-1.38
Commercial and Industrial -	4th	126.13	126.67	141.87	-0.42	-11.09
Consumer -	4th	51.60	51.77	56.43	-0.32	-8.56
Total Deposits -	4th	543.07	521.03	524.03	4.23	3.63
Demand Deposits -	4th	172.37	154.07	151.53	11.88	13.75
Time and Savings -	4th	240.50	242.70	241.77	-0.91	-0.52
Wichita - Quarterly, in Millions						
Total Loans -	4th	1232.57	1192.07	1003.93	3.40	22.77
Real Estate -	4th	206.17	200.20	153.80	2.98	34.05
Commercial and Industrial -	4th	519.33	509.60	463.77	1.91	11.98
Consumer -	4th	341.03	323.10	239.20	5.55	42.57
Total Deposits -	4th	1823.50	1805.03	1759.00	1.02	3.67
Demand Deposits -	4th	470.27	445.73	460.83	5.50	2.05
Time and Savings -	4th	870.17	863.90	840.33	0.73	3.55

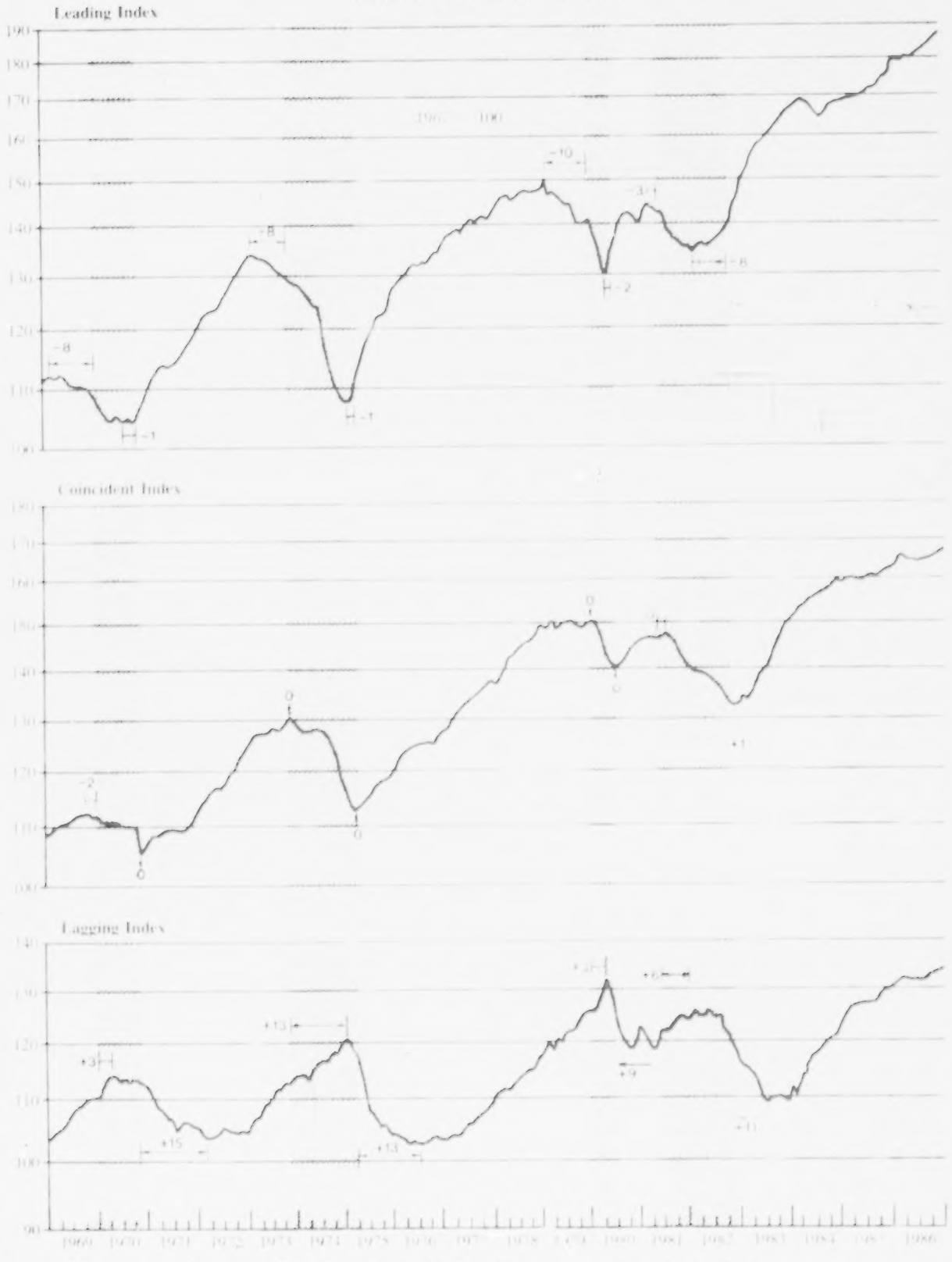
SOURCE: Federal Reserve Bank of Kansas City.
* Figures for all commercial banks are no longer provided by the Federal Reserve Bank of Kansas City. It should be noted, therefore, that the data above pertain only to Federal Reserve member banks of Kansas and do not represent all commercial banking in the state. Since 1980, these data have covered approximately 50 percent

TABLE NINE: SAVINGS AND LOAN ACTIVITY IN KANSAS

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Kansas - Quarterly, in Millions						
Total Assets -	4th	16712.0	16300.0	14626.0	2.53	14.26
Mortgage Loans -	4th	13034.0	12873.8	12204.0	1.24	6.80
B. Kansas City, KS - Quarterly, in Millions						
Total Assets -	4th	1940.00	1965.60	1655.23	-1.30	17.20
Mortgage Loans -	4th	1484.40	1550.47	1476.57	-4.26	0.53
C. Topeka - Quarterly, in Millions						
Total Assets -	4th	2907.57	2924.93	2679.27	-0.59	8.52
Mortgage Loans -	4th	2387.23	2319.43	2273.50	2.92	5.00
D. Wichita - Quarterly, in Millions						
Total Assets -	4th	2254.33	2207.60	2263.30	2.12	-0.40
Mortgage Loans -	4th	1679.00	1660.97	1745.80	1.09	-3.83

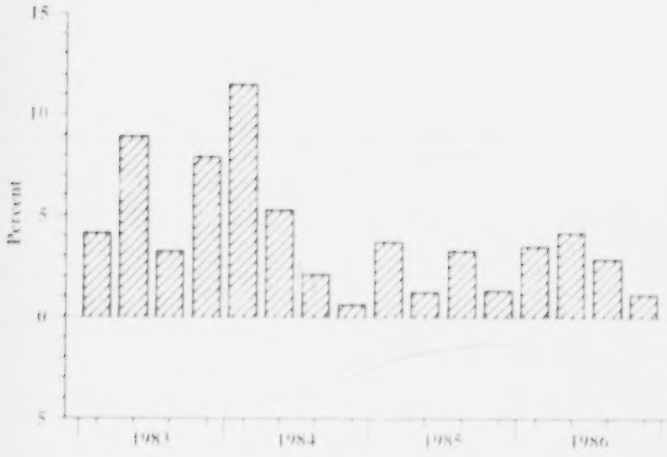
SOURCE: Federal Home Loan Bank of Topeka.

COMPOSITE INDEXES

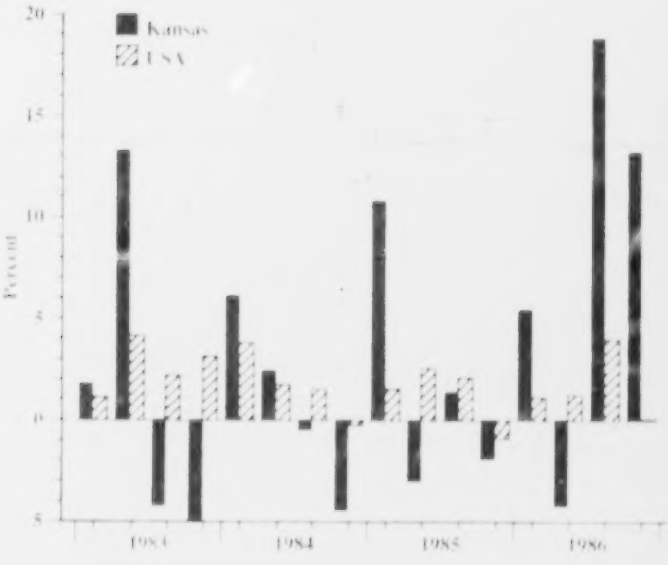


NOTE: Numbers entered on the chart indicate length of leads and lags in months from reference turning dates. Shading indicates periods of recession.

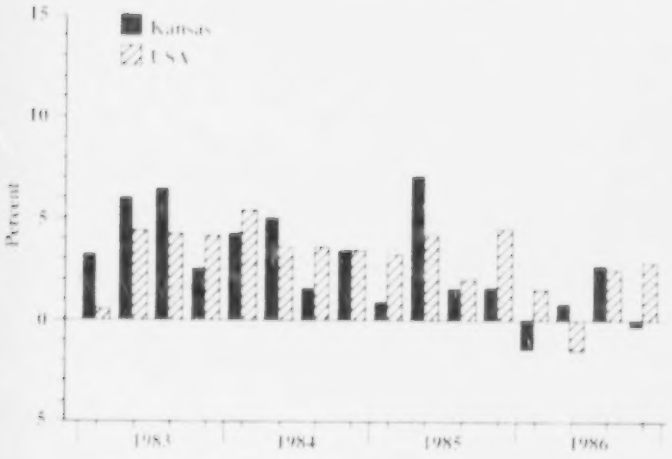
Average Annual Growth Rate of GNP
(1982 Dollars)



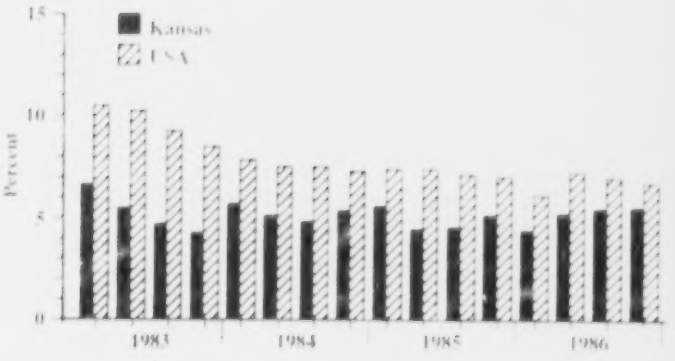
Growth of Retail Sales
(In Current Dollars)



Rate of Inflation
(CPI-U, Seasonally Adjusted)



Civilian Unemployment Rate



The University of Kansas
Kansas Business Review
Vol. 10, No. 3
Spring 1987

Published quarterly by The University of Kansas
The Institute for Public Policy and Business Research
Lawrence, Kansas 66045

Nonprofit Organization
U.S. Postage
PAID
Lawrence, Kansas
Permit No. 65

CONGRESSIONAL INFO SERV/SRI
4520 EAST-WEST HI-WAY #800
WASHINGTON, DC 20014

8/17/87 U70

Vol. 10, No. 4
Summer 1987

KANSAS BUSINESS REVIEW

In this issue:

Some Consequences of Deregulation for Midwestern Banking
JoAnn Paulson

Impacts of Deregulation on Rail Shipping Rates and Service in Rural Communities
L. Orlo Sorenson

The Kansas Brain Drain Revisited: The Case of K.U. Engineering Graduates and National Merit Semifinalists
David Burress

Research Note

Economic Conditions
Economic Indicators

The Institute for Public Policy and Business Research, The University of Kansas

KANSAS BUSINESS REVIEW

Vol. 10, No. 4
Summer 1987

Some Consequences of Deregulation for Midwestern Banking 1
JoAnn Paulson

Well-managed small midwestern banks will survive in the deregulated environment, depositors will benefit, service users will pay their own ways, and less-creditworthy borrowers may suffer.

Impacts of Deregulation on Rail Shipping Rates and Service in Rural Communities 11
L. Orlo Sorenson

Research does not show that rural areas benefited from regulated rail shipping. In fact, shipping rates for Great Plains customers have decreased significantly since deregulation.

The Kansas Brain Drain Revisited: The Case of K.U. Engineering Graduates and National Merit Semifinalists 20
David Burress

Kansas is losing National Merit semifinalists and engineering students as they graduate, but net losses are much lower than gross losses reported earlier.

Research Note 22
The Impact of Economic Change in the Flint Hills
Frank Orazem

Although the Flint Hills' economic base is becoming more diversified, converting grass to beef is still the primary agricultural activity.

Economic Conditions 25
Economic Indicators 31

Advisory Board of the Institute for Public Policy and Business Research—Edward Bruske, President, Kansas Chamber of Commerce and Industry; Harland Priddle, Secretary of Commerce; Acting Executive Vice Chancellor Delbert M. Shankel; Vice Chancellor Frances Horowitz; Anthony Redwood, Executive Director, Institute for Public Policy and Business Research; Dean John O. Tollefson, School of Business; Joseph Sicilian, Chairman, Department of Economics.

Editorial Board—Anthony Redwood, Executive Director; Charles Krider, Director of Business Research; Mohamed El Hodiri, Director of Economic Research; Carolyn Coleman, Editor; Gary R. Albrecht, Research Economist.

Kansas Business Review (KBR), ISSN 0164-8632, is published four times a year. *KBR* is published by the Institute for Public Policy and Business Research, 607 Blake Hall, The University of Kansas, Lawrence, Kansas 66045. The journal is designed by Laura Kriegstrom Poracsky of IPPBR.

Opinions expressed in the articles are those of the author(s) and do not necessarily reflect those of the University of Kansas.

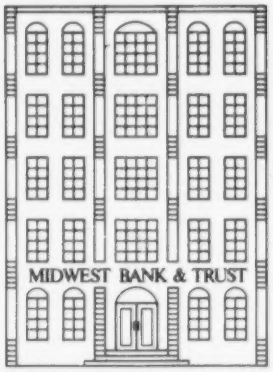
The purpose of the *Kansas Business Review* is to provide a forum for the dissemination of research studies and reports in the field of economics and business that would be of special interest and relevance to business persons, public officials, and academicians in Kansas and the Plains Region.

The Editorial Review Board welcomes submissions of original manuscripts as well as reports on research and opinion pieces in the areas economics and business administration. The style, however, should emphasize exposition rather than technical details. All submissions will be reviewed initially by the editorial staff and, when judged appropriate, will be sent to referees who are knowledgeable about the content.

Manuscripts for consideration should be typed, double-spaced, and submitted in triplicate. In general, length should not exceed three thousand words. Authors are reminded of the combined scholarly/practitioner orientation of the *Kansas Business Review*, which necessitates the contents being in a form readable by that audience.

Submit manuscripts to: Editor, *Kansas Business Review*, The Institute for Public Policy and Business Research, 607 Blake Hall, The University of Kansas, Lawrence, Kansas 66045.

Some Consequences of Deregulation for Midwestern Banking



JoAnn Paulson

Dr. Paulson is an assistant professor of agricultural and applied economics at the University of Minnesota, Minneapolis. **The substance of this article was taken from a paper that Dr. Paulson delivered at the 1987 Annual Midwest Symposium on Public Policy at the University of Kansas. Excerpts from discussants' comments follow the article. The paper will be published in the Autumn 1987 issue of the *Policy Studies Journal,* a joint publication of the University of Kansas and Syracuse University.**

Introduction

In the six years since deregulation, the financial sector has frequently dominated economic news in the Midwest. The 1980 Depository Institutions Deregulation and Monetary Control Act (DIDMCA) and the 1982 Garn—St. Germain Act represented a change in philosophy from strict regulation to allowing market forces and competition to shape the financial industry. A few provisions of the new laws strengthened the role of the regulators, but most decreased restrictions on the activities of financial institutions. Deregulation allowed price competition and marketing of new financial instruments and services and reduced the regulatory disparities between banks and thrifts. Combined with volatile macroeconomic conditions, deregulation has accelerated the rate of change in the financial service industry during the 1980s. These changes have in turn raised issues of efficiency, equity, safety, and competition. After we review the changes of the 1980s, we will examine these relevant issues.

Changes in the Financial Sector During the 1980s

Market Structure and Size Distribution

At the beginning of the 1980s, there were over 14 thousand commercial banks in the United States; most were small. The money center banks of New York, California, and Chicago controlled a significant proportion of the national financial assets, and by the end of 1982 the ten largest banks controlled 23 percent of the total liabilities of all commercial banks. Nevertheless, basic financial services were readily available in even small midwestern communities.

Small financial institutions have not disappeared during the six years since deregulation, but they are no longer as profitable.[1] Recent cost studies, which have taken into account technological change and money saved by producing a broader range of financial services, have shown a cost advantage for larger banks. Since larger banks seem to have a cost advantage, we can expect to see fewer and bigger institutions in the Midwest.

There will, however, still be a niche for provision of localized financial services: Loan evaluation is labor-intensive and depends on local knowledge. This niche will be occupied by the community institutions that can manage efficiently and expand their services. One survey of Wisconsin banks at the time of deregulation found that many small banks were not prepared to make complex business loans, and they lacked experience in recruiting nonlocal funds.[2] In order to survive, these small banks may have to develop links to larger institutions with expertise in complex loans and attracting funds. Small financial institutions can purchase rather than produce some services from wholesalers, or bankers' banks. Another possibility for maintaining local control is to move to a system of franchises, with local institutions operating under the name and with the support of a national system.

The best guess for future market structure is that many small midwestern institutions will indeed develop closer working relationships with regional and national systems, and the large systems will grow in importance. The possibility of exploiting the new technologies and advantages of size will be even more important as interstate systems spread.

Geographic Restrictions

National deregulation left restrictions on interstate and intrastate expansion by banks under the control of state governments. Most states have reduced in-state branching restrictions and are now negotiating multi-state banking arrangements. To date 36 states have passed some form of interstate banking legislation. Entrance to financial markets in some states is contingent on job creation or other economic development targ Many states have adopted regional compacts to allow reciprocal entry from neighboring states. Multi-state banking regions are already

Small financial institutions have not disappeared during the six years since deregulation, but they are no longer as profitable.

The best guess for future market structure is that many small midwestern institutions will indeed develop closer working relationships with regional and national systems, and the large systems will grow in importance.

functioning in New England and the Southeast.

Interstate banking did not really begin in the 1980s. Even before deregulation offered states the option of authorizing interstate banking, there were six methods for acquiring a bank in another state and six more methods for providing banking services across state boundaries without owning a bank in the state being served.[3] With the exception of interstate branching to acquire failed institutions, the other mechanisms for branching across state lines existed and were used before the banking laws were changed, so even areas that do not adopt interstate legislation have felt some influence from out-of-state banking systems. The growth of regional or national systems under interstate banking will reinforce the trends discussed in the previous section toward larger financial systems and more system affiliation. However, interstate banking will probably not have a direct impact in smaller banking markets soon, particularly in the less lucrative markets in the rural Midwest.

Integration of National Financial Markets

Even before deregulation, market forces and institutional innovations had integrated midwestern financial markets with the national markets. During the 1960s and 1970s individuals had started arbitraging interest rate differentials directly. Deposits followed interest rates, moving out of commercial banks and into savings and loan associations and credit unions, which were allowed to pay a slightly higher rate on savings accounts, and later to regions with the highest interest rates. National competition for deposits was spearheaded by the spread of NOW accounts in New England after 1976, followed by money market mutual funds offered by brokerage houses and nondepository institutions. National credit card systems served as a partial substitute for non-interest bearing checking accounts at commercial banks.

The growing competition for deposits had spread into rural areas by the mid-1970s. Rural midwestern banks were forced to compete in interest rates and deposit structure to hold the local deposit base. The interest differential between rural and urban areas narrowed.

It is hard to evaluate regional differentials in lending rates because of differences in industrial concentration, credit needs, and concomitant differences in maturity, collateral, and risk. While one study done shortly before deregulation found a "national" commercial lending market,[4] another study found there were still regional differentials in mortgage lending rates.[5] In certain areas lending rates still deviate significantly from national rates because of recent loan losses or small inefficient banks operating without competition. These cases, however, represent exceptions. The rule is loose conformity to national trends in lending rates.

The use of inter-bank markets to place surplus funds also drew small midwestern markets into closer alignment with national financial market trends. The net flow of funds from rural to urban areas, documented since the early 1970s, through federal funds markets was part of the net flow from small to large banks.[6] One study showed that in general in 1981 small banks, whether metro or nonmetro, were net sellers of federal funds to large banks.[7]

Therefore even though the physical market structure at the time of deregulation still "looked" localized, most local units were linked into national networks. Deregulation not only strengthened those linkages, but made it impossible to avoid the competitive forces that integrate the system. Midwestern financial institutions that compete for deposits can no longer afford to operate a lending policy independent of national market trends.

Integration of financial markets and interregional funds flows will not always work against rural areas. One study found that multi-branch banking also facilitated flows within rural areas so that rapidly growing rural areas benefitted.[8] There is no way to generalize about whether an area will be a net supplier or recipient of funds without examining local market conditions.

Changing Financial Market Practices

Volatile macroeconomic conditions, especially credit risk and interest rate fluctuations, have forced most financial institutions to adopt new operating practices. Innovation started with rapid inflation in the 1970s and sped up after deregulation removed pricing and product restrictions. Just a few years ago most consumers had an established relationship with a local bank covering the basic financial services. Maintaining a non-interest-bearing checking account usually entitled the customer to free checking, and other free services such as funds transfers, cashier checks, and some business advice. In exchange for loyal patronage, customers also qualified for occasional loans. Established borrowers had automatic lines of credit. The nature of the customer relationship with financial institutions has changed in the 1980s, and the traditional relationship built on cheap deposits and subsidized services and credit is no longer guaranteed.

In 1980 Congress mandated that deposit interest ceilings be phased out over a six-year period ending in mid-1986. In addition, the 1980 law allowed all depository institutions to offer checking accounts, thus increasing competition for deposits. Banks no longer have a guaranteed supply of cheap "core deposits"

. . . interstate banking will probably not have a direct impact in smaller banking markets soon, particularly in the less lucrative markets in the rural Midwest.

held in checking accounts. Under price deregulation, financial institutions are expected to "unbundle" and explicitly price financial services. Complimentary services are no longer compensation for holding non-interest-bearing checking deposits. Service fees are a growing source of income for financial institutions.[9]

The pricing of financial products now not only reflects the cost of the service but also interest rate risk. As we moved from negative real interest rates in the 1970s to high real interest rates in the 1980s, financial institutions had to worry more about the gap in maturity and interest sensitivity between loans and deposits. One of the most common tools in managing interest-rate risk now is variable rate lending. Loan maturities have also been shortened and new secondary markets have been developed to help bankers allocate interest rate risk.

Changes in operating practices of financial institutions have redistributed costs and benefits through the system with new pricing arrangements. The changes have generally benefitted savers by allowing them to earn a rate more responsive to market interest rates. Ideally, competition among institutions should provide savers with a range of savings instruments with differing combinations of minimum balance, service fees, interest rates, and withdrawal fees. Unfortunately, some of this product differentiation may be trivial rather than substantive, leaving consumers to chose among a confusing range of services and accounts.

Financial institutions are expected to "rationalize" pricing as services are separately priced. This will offer the opportunity for cost savings for some businesses. Other businesses will pay more as cross subsidization is reduced. Businesses should have the advantage of more competition among service providers, but information and search costs may be significant.

Evaluating the changes in financial markets for borrowers is more difficult. There have been significant changes in both the pricing and availability of commercial credit. Borrowers no longer have the benefit of the artificially low rates common during the years when banks had access to free funds held in checking accounts. Borrowers have also had to assume more interest-rate risk with variable rate loans. In addition to changes in pricing, many borrowers are finding new problems with the availability of credit. The extreme cases have been in the sectors suffering high default risk: agriculture, energy, and real estate. It also may be harder to establish "creditworthiness" for some types of business.

Efficiency and Equity Since Deregulation

Deregulation of financial markets was to promote efficiency by replacing legislative discretion with market forces driven by competition. In sweeping terms, the competitive delivery system and new practices should allow greater efficiency in pricing, movement of funds, and product development. The integration of national markets has facilitated the flow of funds to productive areas and projects. Of course, national integration also facilitates the flow of funds to high risk banks willing to rely on borrowed funds. Larger systems can diversify portfolios across regions and sectors. New products and services tailored to specialized needs have proliferated. Deregulation has also moved the financial system toward a more rational pricing system with explicit pricing of most services and more financial contracts tied to the prevailing market rate of interest. Weak financial institutions have been closed and then placed with new management.

While there are obvious exceptions to these generalizations, changes in financial markets during the 1980s and the contribution of deregulation to efficiency have been positive or neutral. However, the incentives for efficiency in the financial service industry are still weak in some areas. Cheaper financial services are the result of a competitive environment, which may not exist in many areas of the Midwest, where some counties may have as few as three or four banks. In the absence of competition, some banks have been slow to adopt new technology or practices and to move to the greater efficiency that was supposed to come with deregulation. Whether deregulation has led to more efficient financial services depends on the local competitive environment.

Changing practices in financial markets have raised concern about equity and fairness. Recent changes in financial markets have redistributed costs and benefits among savers, consumers of services, and borrowers. The introduction of market-responsive deposit rates on most accounts, the move from cross-subsidization to explicit pricing of services, and use of new instruments that pass interest-rate risk back to borrowers have affected almost everyone who uses the financial system. In some cases the redistribution has been considered undesirable and inconsistent with other public objectives, such as access for low income people to banking services.

Changes in financial services have redistributed costs and benefits among users, but it is not clear whether the changes will hurt or help the Midwest. Variation in the pricing and availability of services among communities and regions depends on the efficiency of the financial institutions and the health of the local economy. Given the large number of financial institutions, growing consumer sophistication, and the forces of competition, price differentials on basic services should not be great enough to contribute to variation in growth rates between regions.

There is an unresolved debate on the importance of financial institutions to the general health and growth of a local economy. On one hand, bankers can promote the local economy by funding new business ventures and providing financial services for on-going businesses and providing consumer credit to support sales. Or bankers who refuse to take risks in the local economy may choke off the growth potential of the area.

On the other hand, those who oppose the emphasis given to financial institutions argue that financial services are just one of a range of services needed for business success and that too much attention is focused on credit while entrepreneurial, marketing, and other functions

In certain areas lending rates still deviate significantly from national rates because of recent loan losses or small inefficient banks operating without competition. These cases, however, represent exceptions. The rule is loose conformity to national trends in lending rates.

Credit market imperfections are probably much rarer than the public perceives, since many loan rejections can be traced to high credit risk.

are neglected. Furthermore financial institutions provide only a limited portion of the credit available through formal and informal channels. It can also be argued that local economic conditions are swamped by broader national economic forces, and even good financial services can do little to change the growth prospects of a community.[10]

It is easy to point to case studies to support either of these viewpoints. Attempts to examine the relationship between bank activities and local economic performance empirically have not had consistent findings and have not resolved the issue. While researchers continue to grapple with the problem of how to measure the interaction between economic well-being and financial flows, the public will continue to focus on the availability of credit.

Availability of loans will remain a sensitive political issue in evaluation of the financial system on a community level. Ideally, the financial system should be capable of channeling credit across regions to the most productive projects, but without objective standards, it is very difficult to evaluate the credit allocation process. Simple indicators of financial institution performance are frequently misleading. For example a low loan-to-deposit ratio may indicate either a reasonable strategy to protect deposit funds and control lending risk in an undiversified agricultural area or an overly conservative lending policy. Similarly a higher interest rate for small businesses may be a realistic reflection of default risk rather than discrimination. Of most concern are arbitrary credit allocation decisions that do not correctly reflect expected profitability or risk.

Credit market imperfections are probably much rarer than the public perceives, since many loan rejections can be traced to high credit risk. However, financial institutions frequently do a poor job in assessing the creditworthiness of new businesses, service firms without tangible collateral, very small businesses, and rapidly growing firms. In some areas of the country and with some products, venture capital sources may be available to fill these gaps. Some venture capitalists are operating in the Midwest, but activities are not geographically dispersed, and venture capitalists rarely invest in smaller communities.[11] State and community economic development funds have been developed to fill financing "gaps." While an evaluation of these funding schemes is beyond the scope of this paper, it can be noted that loan losses tend to be very high in areas where formal financial institutions are unwilling to lend.

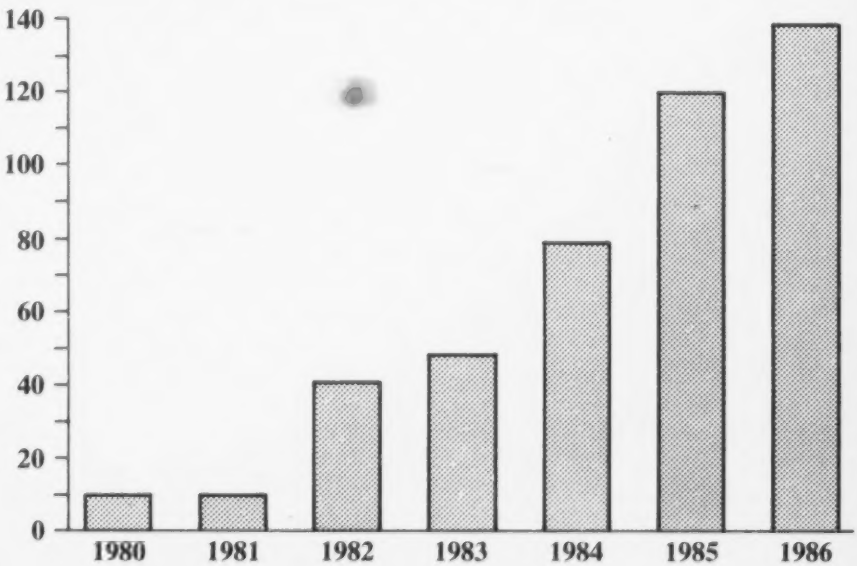
It is too early to make blanket statements about efficiency and equity in partially deregulated financial markets. Early efficiency gains attributed to deregulation have been tempered with the fear that deregulation has contributed to instability in the financial system during the 1980s.

Stability and Financial Institution Failures

Bank and thrift failures or forced mergers are now a familiar part of the economic landscape. This stands in sharp contrast with the pre-1980 record: Between 1947 and 1980, there were an average of 6.4 insured bank failures per year. The number of failures started to rise in the mid-1970s, with an average of 12.9 failures per year from 1975 into the early 1980s. As Figure 1 shows, the number of bank failures has risen sharply since 1980. The FDIC expects as many as 150 in 1987. Financial problems in thrifts were severe in the early 1980s. Only 130 thrifts failed from 1934, when deposit insurance was introduced by FSLIC, until 1980. Between 1980 and 1985, 581 federally insured savings and loans failed. In 1986, 21 savings and loans were closed, 43 were forced to change management and 22 were forced to merge with stronger institutions. While the number of savings and loan failures has declined since the high of 252 in 1982, and the interest rate environment for thrifts has improved since 1981, there are still several hundred thrifts close to insolvency.

There is considerable debate about the causes of the rash of financial institution failures. Several characteristics of the macroeconomic environment during the

Figure 1
Failures of Federally Insured Banks, 1980-1986



Source: Federal Deposit Insurance Corporation.

Many financial institutions have taken advantage of deregulation to increase risky activities, like direct lending and off balance sheet operations. The flat-rate deposit insurance schemes of FDIC and FSLIC do not force financial institutions to pay a higher premium on more risky activities.

1980s have increased the risk of financial institutions: volatile interest rates; "boom and bust" problems in agriculture and energy; and the repayment problems of debtors in developing nations. These factors eroded the profit margins of some institutions and undoubtedly contributed to weakness in the system.

In the Midwest we are especially aware of the problems of agricultural banks. During the 1970s financing agriculture was highly lucrative, but the rate of return on equity earned by agricultural banks peaked in 1980 and has declined every year since then. The return on assets in 1985 at the 2,200 agricultural banks in the Midwest was about one-third of the 1979 rate.[12]

Many of the banks that have been allowed to fail have been heavily involved in agricultural and energy finance. Of the 239 commercial bank failures between 1983 and 1985, 137 were rural banks and 107 specialized in financing agriculture. As Figure 2 shows, the problem of failing banks was particularly severe in the grain producing areas of the Midwest. Half of all bank failures from 1983 to 1985 were in the Northern Plains and the Corn Belt,[13] and that area had three-fifths of the rural bank failures and three-quarters of the agricultural bank failures.[14]

The economic position of banks in agricultural areas may not have started to rebound yet.[15] Some agricultural banks sold securities in 1985 and 1986 in order to show more income.[16] The preliminary data available suggest that the loan-loss and earnings position of agricultural banks started to stabilize toward the end of 1986.[17]

Besides the volatile macroeconomic conditions, there have been changes within the financial sector that may have escalated failures. Explicit regulatory policy since deregulation has been to use market forces to "weed out" weaker financial institutions. This policy has been applied to smaller financial institutions, but regulators have not been as anxious to see "market forces" close larger banks. Change in regulatory policy explains why small financial institutions that get in trouble have not been "bailed out," but it does not explain how so many financial institutions got into trouble in the first place.

Aggressive competition and new activities have also been cited as causes of financial institution failures. Many financial institutions have taken advantage of deregulation to increase risky activities, like direct lending and off balance sheet operations. The flat-rate deposit insurance schemes of FDIC and FSLIC do not force financial institutions to pay a higher premium on more risky activities. In addition, poor management frequently coupled with illegal activities has been a factor in most failures.

The impact on the local community of a financial institution failure has been mitigated by government intervention. So far, few failed financial institutions have been closed for more than a few days. Usually the institutions are taken over immediately by healthy institutions with assistance from FDIC or FSLIC, which have insured deposits under a hundred thousand dollars. But continuing service to borrowers after the failure of a financial institution depends on the FDIC or FSLIC to find a buyer willing to assume all outstanding loans.

As mentioned before, the regulators have been more reluctant to allow large banks to fail. About 80 percent of the banks that failed between 1982 and 1985 had assets of less than $50 million; fewer than 5 percent had assets of over $300 million.[17] Therefore the rash of bank failures has not been seen as a threat to the stability of the national financial system. Of more immediate concern are the solvency of the deposit insurance schemes and regulatory reform to stabilize remaining institutions.

With the solvency of the insurance schemes, particularly the FSLIC, in question, the potential costs of financial institution failures loom large. Several hundred thrifts have negative net worth or are near insolvency. While the cost of closing insolvent thrifts could be as high as $22.5 billion, the FSLIC has reserves of $4.6

Figure 2
Failures of Federally Insured Banks, 1983-1985

Source: Federal Deposit Insurance Corporation.

billion. The FSLIC will need federal assistance.

There are several options now under discussion to discipline the risk-taking activities of financial institutions in an attempt to stabilize the system. There are three general approaches under consideration:

1) to raise the required capital standards for financial institutions engaged in more risky activities;

2) to adjust deposit insurance premiums for risk; and

3) to shift more responsibility for monitoring the risk of financial institutions to the public.

Clearly the impending reform of deposit insurance and regulatory policy will have a major impact on providers and users of financial services since the reforms will determine which institutions survive, the pricing, security and availability of services, and the division of responsibility for monitoring between the public and the regulators. Reform of the deposit insurance schemes will also have to confront the issue of which institutions are to be insured.

Porous Boundaries and Increasing Competition

The debate over which institutions will be allowed to sell financial services and the nature of allowable competition among financial service providers is still unresolved. Experimentation and innovation in financial markets in the 1960s and 1970s included testing the porous legal boundaries between financial and nonfinancial firms, between investment and commercial banking, and between commercial banks and thrifts. Existing institutions developed new products, or new institutions were established to cross the boundaries drawn by past regulations. Deregulation did lessen the segmentation among depository institutions, but it did not remove the explicit barriers between financial institutions and nonfinancial firms.

Deregulation attempted to "level the playing field" among depository institutions to allow broader competition. For example, all depository institutions, including commercial banks, savings and loans, mutual savings banks, and credit unions, must now meet reserve requirements with the Federal Reserve system. Segmentation of financial markets by product lines was also reduced somewhat. For example, after 1980 savings and loans were allowed to diversify into commercial and consumer loans, issue credit cards, and accept negotiable order of withdrawal (NOW) accounts. All depository institutions are now allowed to offer checking accounts, a service formerly reserved for commercial banks.

The new regulations increased the range of potential direct competition between commercial banks and thrifts, but specialization has been maintained. Banks and thrifts still have some product restrictions, different regulators, and different insurance schemes. In practice, banks are still the most diverse financial institutions, while savings and loan associations overwhelmingly concentrate in housing finance.

The boundaries between commercial and investment banking from the Glass-Steagall Act of 1933 were drawn not only to prevent commercial banks from undertaking more risky activities, but also to restrict concentration and market power in the financial sector. Commercial banks were limited to deposit-taking and lending while investment banks were held to underwriting debt and equity issues. This division was to prevent the concentration of both debt and equity finance in a few "super banks." Later widespread adoption of the bank holding company structure allowed commercial banks to expand into some new investment activities, such as dealing in securities backed by any unit of government. Deregulation permitted an even larger menu of activities, some overlapping with investment banks.

Since 1981 commercial banks have started to provide discount brokerage services, with about 1,500 banks offering services by the end of 1983 and 1,800 by 1985. The SEC estimates that commercial banks accounted for about 20 percent of securities trading by 1986.[19] Commercial banks currently place commercial paper, mortgage-related securities not backed by government, municipal revenue bonds, and securities backed by consumer receivables like car loans. They are eager to move into underwriting, and state-chartered banks in eleven states can engage in insurance activities which are prohibited to national banks and bank holding companies. Congress has not yet passed legislation on allowable activities, but the Federal Reserve Board has agreed to rule soon on this and related issues. So far the changes have been established in ad hoc regulatory and court rulings on the state and national level.

The United States is one of the few countries that has tried to enforce a strict separation between financial and business interests. Deregulation of the financial industry did not reduce the boundaries between financial and nonfinancial firms, but again market forces have poked holes in the wall. Nonfinancial firms have purchased nonbank banks to provide a limited range of financial services. Nonbanks are not covered by bank holding company regulations because they offer either demand deposits or commercial loans, but not both. The Federal Reserve has tried to close the nonbank bank loophole used by commercial firms to enter the financial service sector, but has not been successful. Also many nonfinancial firms have started to offer a limited range of financial services. Several large retail companies have entered the financial service business. Sears Roebuck, for example, now owns Sears Savings Bank, Allstate Insurance Co., the Dean Witter Reynolds securities firm, and it is offering a "Discover" credit card.

The 1980 and 1982 legislation did not resolve the conflict between encouraging competition in financial services while maintaining boundaries among commercial banks and thrifts and investment banks and commercial ventures. Further federal legislation must clarify the nature of allowable competition in financial services. The issue of maintaining barriers between commercial and financial firms is closely

Deregulation attempted to "level the playing field" among depository institutions . . . all depository institutions, including commercial banks, savings and loans, mutual savings banks, and credit unions, must now meet reserve requirements with the Federal Reserve system.

. . . the issue of allowable activities and competition with commerial firms will have to be decided in conjunction with reform of the deposit insurance program.

tied to the issue of "safety and soundness" of financial institutions. First it is not clear whether expanding into new areas of business would increase or reduce the volatility of earnings for banks and thrifts.[20] Financial institutions have special government-sponsored mechanisms for stabilizing the system like discount window privileges and deposit insurance. If these mechanisms are used to stabilize earnings across a broader range of subsidiary activities, financial firms have an unfair competitive advantage over commercial firms. On the other hand, if engaging in new activities destabilizes the earnings of financial firms, the burden may fall either on the deposit insurance schemes or the taxpayer. Therefore the issue of allowable activities and competition with commercial firms will have to be decided in conjunction with reform of the deposit insurance program.

Unless regulators become more decisive about drawing and maintaining the distinction between various types of financial service providers, current experiments in the market suggest the distinction will blur. We should expect a debate on the costs and benefits of maintaining legal and regulatory distinctions between the various providers of financial services. Communities will have a stake in this debate since it will determine the structure and competitiveness of the delivery system for financial services. Depending on future legislation and regulatory action, we may move into an era with retail chains in direct competition with financial institutions for providing basic financial services. But it is still too early to predict what the nature of competition will be, or if that competition will bring the promised benefits to all areas.

Conclusions

The financial services industry is being transformed by technical change, innovation, deregulation, and increasing national and international competition. The importance of deregulation in allowing the transformation to proceed rapidly should not be minimized, but many of the most important forces changing markets were evident before deregulation.

The trends discussed in this paper suggest likely directions of change, but the future is far from clear:

1) Under deregulation small midwestern banks will be subject to more competition and may have a cost disadvantage, but small banks are likely to survive in the system and continue to play a vital role in communities.

2) A majority of states have now authorized regional compacts or allowed some form of interstate banking. The impacts of this will be felt first in the regional banking centers. Increased competition in financial services will be slow to come to small markets.

3) Midwestern financial markets have developed close linkages with national financial markets. Competition, particularly for deposits, means local institutions cannot deviate much from national market trends.

4) Financial market practices have been changing rapidly in response to price and product deregulation and the volatile market environment. In general, depositors may benefit as more accounts pay a market interest rate. Consumers of financial services should expect to purchase unbundled and explicitly priced services. It is harder to generalize about expected changes for borrowers. Large borrowers can take advantage of competition. New, smaller, or less creditworthy borrowers are likely to have more difficulty establishing a banking relationship and signaling creditworthiness.

5) We should expect changes in the policy toward maintaining "safety and soundness" in the financial sector. Several hundred financial institutions are close to failure. Closing these institutions while protecting depositors will be expensive, and the FSLIC will need federal funding. Mispriced deposit insurance creates problems throughout the system and is being reviewed.

6) Deregulation allowed for an increase in competition among different types of financial institutions; but segmentation is still strong. There is even greater unrealized potential for competition in financial services from commercial firms. The issue of allowable competition between financial and commercial firms has not been resolved yet.

New technology and macroeconomic conditions have been behind many of these changes, and it would be extremely expensive to reimpose tight regulations on financial institutions. Thus, many of the features of the new financial system are here to stay. Further, the transition to a new financial system is far from complete, and there are still many unknowns. Several critical issues, such as allowable competition and reform of the deposit insurance scheme, must be decided through new legislation or regulatory action.

Notes

[1] Diana Fortier and Dave Phillis, "Bank and Thrift Performance Since DIDMCA," *Economic Perspectives*, Federal Reserve Bank of Chicago (September/October 1985), pp. 58-68.

[2] Steven J. Taff, Glen C. Pulver, and Sydney D Staniforth, *Are Small Community Banks Prepared to Make Complex Business Loans?* (University of Wisconsin-Madison, Dept. of Agricultural Economics, 1985).

[3] Richard Duwe, "Interstate Banking in the Tenth District," *Banking Studies*, Federal Reserve Bank of Kansas City, Annual Report 1986, pp. 1-11.

Several hundred financial institutions are close to failure. Closing these institutions will be expensive, and the FSLIC will need federal funding.

[4] Dale K. Osborne, "Is the Southwest Short of Capital?" *Economic Review*, Federal Reserve Bank of Dallas (January 1983), pp. 1-10.

[5] Stephen O. Morell and Richard P. Saba, "The Effects of the Federal Home Loan Mortgage Corporation Secondary Market on Regional Mortgage Yield Differentials," *The Quarterly Review of Economics and Business* 23(1):85-98 (1983).

[6] Matthew Shane, *Minnesota's Bank Structure and Rural Credit* (University of Minnesota, Dept. of Agricultural and Applied Economics, 1975), Staff Paper P75-7.

[7] Daniel L. Milkove, *Do Bank Size and Metro-Nonmetro Location Affect Bank Behavior?* (Washington, DC: United States Dept. of Agriculture, Economic Research Service, 1985), Rural Development Research Report No. 47.

[8] David L. Barkley, Glenn T. Potts, and Cindy Mellon, *Bank Structure and Performance at the Nonmetropolitan Level: The Arizona and Colorado Experience* (The University of Arizona, Agricultural Experiment Station, 1984), Technical Bulletin No. 251.

[9] Deborah J. Danker and Mary M. McLaughlin, "Profitability of U.S.-Chartered Insured Commercial Banks in 1985," *Federal Reserve Bulletin* (September 1986), pp. 618-632.

[10] David L. Barkley and Peter E. Helander, *The Role of Commercial Bank Loans in Nonmetropolitan Economic Development* (The University of Arizona, Agricultural Experiment Station, 1985), Technical Bulletin No. 253. Also Daniel L. Milkove and David B. Weisblat, *The Effects of the Competitive Structure of Financial Institutions on Rural Bank Performance and Economic Growth* (Washington, DC: United States Dept. of Agriculture, Economic Research Service, 1982).

[11] Ron Hustedde, and Glen Pulver, "Venture Capital in Rural Areas," draft (University of Wisconsin-Madison, Dept. of Agricultural Economics).

[12] The Federal Reserve Bank of Chicago defines agricultural banks as banks with at least 30 percent of total loans to agriculture (Federal Reserve Bank of Chicago, 1985).

[13] The Northern Plains includes South and North Dakota, Nebraska, and Kansas. The Corn Belt covers Iowa, Illinois, Indiana, Ohio, and Missouri.

[14] Gregory Gajewski, "Rural Bank Failures Not a Big Problem—So Far," *Rural Development Perspectives* 2(3):2-8 (1986).

[15] A larger proportion of bank failures in 1985 were rural agricultural banks than in 1983. Almost 70 percent of the failed banks in 1985 were rural banks, up from 34 percent in 1983; and more than 55 percent were agricultural banks, up from 16 percent in 1983. Here agricultural banks are defined as banks with over 17 percent of total loans to agriculture (Gajewski, 1983:2).

[16] Even with bond trading profits and tax credits, 23 percent of the agricultural banks in the four midwestern Federal Reserve districts lost money in 1985, compared with 14 percent in 1984 and only one percent in 1980 (Federal Reserve Bank of Chicago, 1985).

[17] Emanuel Melichar, "Farm Credit Developments and the Financial Condition of Agricultural Banks: A Preliminary Report for the National Agricultural Credit Committee," March 16, 1987.

[18] Gajewski, "Rural Bank Failures."

[19] *The Wall Street Journal*, December 23, 1986, p. 44.

[20] Anthony Saunders and Michael Smirlock, "Intra- and Interindustry Effects of Bank Securities Market Activities: The Case of Discount Brokerage," (New York University, Saloman Brothers Center for Study of Financial Institutions, 1985), Working Paper No. 352. Also Larry Wall and Robert A. Eisenbeis, "Risk Considerations in Deregulating Bank Activities," *Economic Review*, Federal Reserve Bank of Atlanta (1984), pp. 6-19.

Comments

Wilbur T. Billington is executive vice president of the Federal Reserve Bank of Kansas City.

This whole range of topics is of vital importance to banking and to every community throughout the country. We have long placed a premium on safety and stability and on competition and efficiency. The basic question today is How far can we broaden the range of financial services and participants, with the attendant increase in financial risk, without piercing the federal safety net of deposit insurance and the Federal Reserve discount window and upsetting the payments system?

Recently, a number of readers and writers have focused on this issue and related it to the structure of the financial services firm of the future. They have, in various ways, identified several alternatives—financial services holding companies, bank service corporations, narrow or fail-safe banks, and nonbank banking.

The financial services holding company, as advocated by the Association of Bank Holding Companies and several other groups, could have a bank or thrift holding company as a subsidiary in addition to other subsidiaries devoted to securities, insurance, and real estate services.

A bank services corporation, as envisioned by several legislators and the American Bankers Association, would be a subsidiary of a bank holding company separate from the bank subsidiaries and empowered to conduct securities, insurance, and real estate operations.

The fail-safe bank idea has been around for many years and recently was revived by Robert Litan of the Brookings Institute. This type of bank would protect depositors by backing their accounts with 100 percent reserves or high-quality money market instruments. Thus, a fail-safe bank might resemble a money market mutual fund and could be used to allow banks to pursue expanded activities in separate subsidiaries funded through uninsured, nondeposit sources. Banks with restricted access to uninsured funding conceivably would remain in their traditional roles.

Nonbank banking is not really a proposal, but refers to the present use of nonbank banks to enter into deposit banking with commercial lending, other financial activities, and even some commercial operations, conducted through other subsidiaries. This type of firm is possible due to the way "bank" is defined in the Bank Holding Company Act, and several companies have already taken advantage of this definitional loophole. A few banking organizations have also considered adopting this framework as a means of circumventing limitations on nonbanking activities.

The most encompassing analysis and set of proposals is that by E. Gerald Corrigan, president of the Federal Reserve Bank of

How far can we broaden the range of financial services and participants, with the attendant increase in financial risk, without piercing the federal safety net and upsetting the payments system?

. . . survival of all banks, large and small, urban and rural, will be dependent not only upon diversification of risk and services, but also upon the ability of the banking industry as a whole to maintain a competitive position in the financial services market.

New York. The Corrigan approach would allow bank or thrift holding companies to conduct a broad range of financial services and would also permit financial holding companies to acquire banks and thereby become bank holding companies. Nonfinancial-commercial concerns, however, would not be permitted into the business of banking. Moreover, his proposals rest on three basic premises designed to ensure the integrity of the public safety net. These are 1) that banking and finance needs to be subject to a higher degree of official supervision than most other forms of business; 2) that financial reform efforts should aim to enhance safety and stability; and 3) that reform must take account of market realities and competitive forces.

In summary, Professor Paulson has provided a good overview of the emerging issues associated with deregulation and changes in the financial system. This is the first chapter of the story. It describes how the consumer in communities across the country potentially could have access to a broader array of financial services at one institution—possibly a bank, possibly some other bank-like institution. The next chapters must deal with how that deregulation proceeds and how the public safety net, important to consumers and communities everywhere, is maintained and strengthened.

Richard D. Nichols is chairman and president of Home State Bank and Trust, McPherson, Kansas, and president of the Kansas Bankers Association.

It is still open to question which of the changes in banking are to be temporary and which are to be permanent, as Professor Paulson points out. While it is an exciting period in banking, it is also a harsh period, especially for the smaller institutions. In Kansas, a state with some 612 banks, we are very concerned about the viability of the community bank. Professor Paulson comments that the impact of a financial institution failure on the local community has been mitigated by government intervention, and she states that at least so far, few failed financial institutions have been closed for more than a few days.

While it is true that FDIC insurance has softened the financial impact of a financial institution failure, it is not true that few failed banks have been closed for more than a few days. The impact, therefore, can be considerable. Reflect upon the three Kansas banks in one-bank communities where failures have occurred and these banks have not been replaced by successor banks. When the community loses its only bank, which is the economic focal point and catalyst for nearly all functions, the town begins to die. This has been the case in Herndon, Bronson, and McCracken.

Even in towns where there was more than one bank, if a bank closed with no buyer, it created a hardship on the depositors and the borrowers. The surviving bank could not take all the deposits, and many borrowers suddenly found the FDIC as their banker. This was the case in the Kansas towns of Sedan, Kiowa, LaCrosse, and Chanute.

But as the past president of the American Bankers Association, Donald T. Senterfitt said, ". . . the plain fact is that financial services deregulation has not happened yet. Those who purport to draw anti-deregulation conclusions based on some market phenomenon are talking through their hats, because deregulation has yet to occur."

The commercial banking industry today continues to operate under service restrictions that were fashioned over fifty years ago for a vastly different economy. Those depression-era restrictions—essentially limiting commercial banking to taking deposits and making loans and certain highly circumscribed investments—really were not troublesome until the environment changed in the early 1970s.

In her paper, Professor Paulson talks about explicit changes in regulatory policy since deregulation that are using market forces "to weed out" weaker financial institutions. She states that this policy has been applied to smaller financial institutions, but regulators have not been as anxious to see "market forces" close larger banks. Therefore, a change in regulatory policy explains why small financial institutions that have gotten in trouble have not been "bailed out."

This statement would be open to question, I believe, from the standpoint of current regulatory procedure. I would submit that there has been no explicit regulatory policy for or against banks in regard to size, although it might seem so to smaller troubled banks. Officials of the Federal Deposit Insurance Corporation Regional Office in Kansas City have stated that everything possible is being done to ensure the viability of banks regardless of size. In recent instances, it certainly appears that they are trying every way possible to keep the assets in the hands of people in the communities.

Assisted takeovers at Talmage and Westphalia are examples. It would have been easy to close the banks, but here the FDIC went "the extra mile" to work with the ownership and kept the banks open.

Corinne Cooper is an associate professor at the University of Missouri—Kansas City School of Law. She specializes in banking law.

Professor Paulson notes that the number of small banks has not decreased significantly, although their profitability has not kept pace with larger institutions. Her discussion of economies of scale and scope raises several interesting points about the changes which may be necessary for small banks to maintain profitability in the deregulated market. Obviously, survival of all banks, large and small, urban and rural, will be dependent not only upon diversification of risk and services, but also upon the ability of the banking industry as a whole to maintain a competitive position in the financial services market.

As Professor Paulson points out, regional banks will be profoundly affected as deposit and loan markets become nationalized. Even though geographic de-

We cannot reconstruct the barriers that permitted purely local intermediation, and having seen the results of this practice, I'm not sure we would want to.

regulation has not been fully implemented, small banks, both urban and rural, are in direct competition with larger banks, as well as nonbank financial intermediaries. But this competition does not extend to every product line. Complete deregulation will magnify this effect.

Competitive pressure has forced banks in general to respond with market-rate interest on deposits and loans, but regional distinctions in interest pricing can still be found. For some customers and some products, nationalization has already occurred. Disintermediation to money market mutual funds forced banks to compete with market rate deposit accounts. Most rural bank customers do not have ready access to an alternative source of demand deposit servicing. I might take my savings out of a local bank and place them in a money market account or distant bank in order to earn higher interest rates. But I am not as likely to move my checking account. I may obtain a Mastercard from a distant bank with a lower interest rate, but my short-term credit needs are more likely to be met by my local bank. So, in the short run, rural banks are still providing specialized services that competitors cannot offer. Even without geographic barriers, the cost of entry into the market should leave well-managed rural banks untouched.

The point is that these services must be explicitly priced to provide sufficient revenue if they are no longer being subsidized by more profitable product lines. Both banks and customers must become accustomed to explicit pricing which accurately reflects bank costs. Customers have been spoiled, and banks have been lazy in their failure to make these determinations sooner.

Professor Paulson is correct that lending usually requires local expertise for analyzing risk, but several innovations already exist that will permit banks to lend beyond their regions. One is the securitization of loans. Through securitization, lenders can sell an interest in a loan pool to general investors. The experience in the home mortgage market tells us that securitization enhances the efficiency of the loan market, bringing together geographically dispersed lenders and borrowers through the use of securities, which are readily transferrable. These have increased, not decreased, the sources of mortgage credit. As it is extended to other types of loans, their availability should also improve.

Another is the use of loan swaps, interest rate swaps, and other hedging transactions. Two banks with equivalent loan portfolios, each in an undiversified local market, can significantly improve their risk positions, and neither need make the loan without "local expertise." The failure of Penn Square Bank made banks justifiably wary of this practice. But it was the lack of inquiry into Penn Square's lending practices, and not the process itself that caused the problem.

Critics of deregulation (including most small banks) argue that small banks will simply be unable to compete in a national marketplace. Concentration is considered the inevitable result. But small banks need not be the losers in a national marketplace. As Professor Paulson points out, the purchase of services, increased use of technology, and new kinds of correspondent relationships will improve their ability to compete. This is also true in the nationalization of lending. Banks that lack expertise in nonlocal lending may find diversification easier with securitization and other new lending practices. These innovations should have the concomitant effect of permitting small banks to reach more efficiently into nonlocal markets for funding sources.

Think about this in the context of the fear over the flight of funds. Depositors might express righteous indignation that their deposits are being used to fund loans in distant locations. But loans will be made within the area, both by local banks and by distant lenders, if securitization permits the marriage of national sources of credit with local expertise. Profitability will be the key. The shrinking availability of farm credit results in part from exclusively local lending practices: many banks have gone under because they lacked diversification; those still operating must necessarily be more cautious in their risk analysis, both as applied to a single borrower and as applied to an undiversified local portfolio. And, as Professor Paulson points out, customers cannot have it both ways. They cannot demand that their local bank provide market interest on deposits, expect that the bank be involved in safe and sound banking practices, and then insist that loans be made locally where economic conditions do not justify the credit extension.

Professor Paulson notes that small banks and rural banks have been net sellers of federal funds. What is happening to those funds? They are being used by fully extended larger urban banks to provide for short-term liquidity demands. Why aren't those funds being used by small banks in their own regions? Perhaps limited local loan opportunities or the desire for diversification accounted in part for this shift in funds. The shift may reverse to the benefit of local borrowers when small banks have equal access to the lending market.

My point is not to second guess Professor Paulson's analysis, but to extend it. Theoretically, in a fully nationalized deposit and lending market, all banks regardless of size will be able to take part in the process, and all customers, whether depositors or borrowers, will reap the benefit. We cannot reconstruct the barriers that permitted purely local intermediation, and having seen the results of this practice, I'm not sure we would want to.

The issue of equity in access to bank

I fear that Professor Paulson has been overly optimistic in her estimate of bank failures in 1987. . . . there may be as many as two hundred failures this year.

services is an important one because customers may be evaluating deregulation as to its impacts on their ability to obtain necessary services. Banking has traditionally been regulated in two very different ways: those regulations that were aimed at maintaining bank solvency and those that advanced unrelated social concerns. Professor Paulson suggests that banks that are no longer protected from competition may not be capable of providing public services. It may be that Congress will continue to insist that even deregulated banks meet certain public policy obligations. Certainly there is an historical basis for this type of regulation even in industries that are not otherwise regulated.

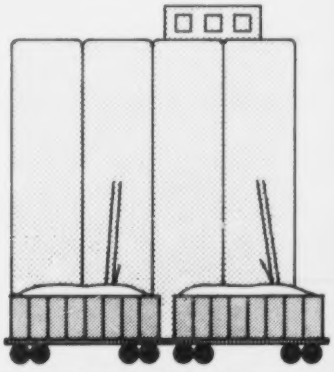
The problem of bank failure is obviously of interest to anyone looking at the Tenth District. This area was among the highest for bank failures in 1986. But we have no reason to believe that deregulation will either improve the situation or cause further deterioration. On one hand, nationalization and diversification of risk may protect banks from the effects of a radical downturn in local economies. On the other hand deregulation is not likely to prevent bank failures in the short term. Since deregulation the FDIC has been increasingly willing to let banks fail. And I fear that Professor Paulson has been overly optimistic in her estimate (which comes from the FDIC) of bank failures in 1987. As of June 30, 1987, 96 banks have already failed this year. This suggests that there may be as many as two hundred failures in 1987 and that we have not seen the peak of the failure curve.

One final note is on the entry of commercial banks into areas traditionally reserved for investment banking. Clearly, the barrier between these two activities created by Glass-Steagall is about to fall. Incursions have been made by both players, as investment banks buy nonbank banks and thrifts, while commercial banks offer discount brokerage services. In particular, banks have expressed a strong interest in entering into the commercial paper underwriting field. This may be viewed as an overt move by commercial banks into investment banking or as a reaction to investment bank incursions, because commercial paper underwriting undercuts the traditional role of commercial banks as providers of short-term commercial credit.

Although commercial banks were rebuffed by the Supreme Court in their initial foray into commercial paper underwriting, they are back with force. The Federal Reserve has recently approved two applications for banks to enter into this field through nonbank holding company subsidiaries. The Senate recently approved a banking bill that would place a moratorium on Federal Reserve approval of these activities, and so their continued use may be in doubt until Congress makes a determination about the viability of this division. The recent "Corrigan Report," which recommended activity-based regulation and the removal of the Glass-Steagall barrier, makes clear that some bank regulators are ready to see a re-integration of these activities.

At its most basic level, Professor Paulson's paper makes an important point. All banks, including community banks, must be prepared to compete and compete well if they are to survive in a deregulated environment. In that sense, banks are not distinguishable from the other recently deregulated industries.

Impacts of Deregulation on Rail Shipping Rates and Service in Rural Communities



L. Orlo Sorenson

Dr. Sorenson is a professor of agricultural economics at Kansas State University. This article is a condensed version of a paper that Dr. Sorenson delivered at the 1987 Annual Midwest Symposium on Public Policy at the University of Kansas. Excerpts from discussants' comments follow the article. The paper was published in full in the June 1987 issue of the *Policy Studies Journal*, a joint publication of the University of Kansas and Syracuse University.

Introduction

Important deregulation of railroads occurred with passage of the Staggers Rail Act in 1980. That Act changed the rules governing transactions in rail transportation markets, and these changes have had impacts on agriculture and rural communities.

Before 1980, evolving railroad regulation had come to encompass basically four social objectives as follows:

1. the control and prevention of monopoly practices by railroads;

2. the protection of shippers and other carriers from unfair discrimination in rail rates and services;

3. the provision of certain types of unre-

There is little doubt that more rail mileage was maintained in rural areas, especially in the 1970s, than would have been maintained without Interstate Commerce Commission surveillance.

munerative services (e.g., continuance of low-density branch lines); and

4. the insurance of adequate profits for an expanding and viable rail system.

These objectives were not always compatible, so compromises were necessary. Perceived public benefits of regulation were achieved with varying degrees of success.

How Regulation Was Supposed to Benefit Rural Communities

There were two types of alleged benefits of economic regulation of railroads specific to agriculture and rural communities: 1) rate benefits arising from value-of-service pricing and 2) subsidy benefits to rural communities by maintaining unremunerative rail service through cross-subsidies within the rail system. Benefits frequently have been exaggerated in both cases.

Rate Benefits

Conventional wisdom has led to the conclusion that agriculture has benefitted substantially from value-of-service pricing. Value-of-service pricing favors low rates for products with lower value per ton, like grain, and higher rates for higher-valued products, like watches. The Hoch-Smith Resolution passed by Congress in 1925 is cited as evidence that agriculture was favored in the policy arena. This resolution required the Interstate Commerce Commission to give consideration to the relationship between agricultural freight rates and agricultural incomes and has been interpreted as clear legislative sanctioning of a value-of-service rate structure.

In practice, value-of-service pricing patterns have reflected "what the traffic will bear," both within and among various sectors of the economy. Rail freight volume changes when rail freight rates change. Some commodities are very responsive to freight rate changes. Other commodities are not so responsive because of market conditions, production alternatives, or low levels of transport competition from other types of carriers. If railroads charged all shippers a uniform rate based on the railroads' average cost per ton, they would lose much of the rate-sensitive business and its contribution to fixed costs. Hence, various types of traffic do not contribute equally to railroads' fixed costs. One study, for example, found that wheat traffic contributed disproportionately to railroad fixed costs, often ranking among the top five commodities in contribution to overhead costs. In one year studied, wheat traffic was the leading source of revenue applied to rail fixed-cost coverage, surpassing coal.[1]

Agricultural freight rates structured by rate-bureau action and protected by the value-of-service policy did result in regional discrimination in agricultural products' traffic among producing areas. For example, for many years high-plains grain shippers paid rail rates that exceeded carrier costs by a larger margin than rates paid by shippers located near the Mississippi River, who had barge alternatives available.

Subsidy Benefits

Internal subsidy is a condition in which "unremunerative services are provided . . . out of the profits from other services."[2] This can be called taxation by regulation. The common carrier (which included all Class I railroads prior to Staggers) is obligated by common law to continue all services authorized, except in cases of complete withdrawal from service, until permitted to withdraw portions of total service by the authority-granting agency. In the case of railroads, the authority-granting agency is the Interstate Commerce Commission.

Rail line mileage has decreased steadily since the 1920s. Historically, the Interstate Commerce Commission, with the support of state regulatory commissions and shippers, has required that rail service be maintained on line segments it considers essential for public convenience and necessity, even though railroads have not found those segments to be profitable. The Commission has established procedures for hearing evidence from applicants for service abandonment and from those opposing abandonment. The fact that most abandonment applications have been successful in the past is often cited as evidence that the Interstate Commerce Commission favors carriers in abandonment cases. The railroads' successes may also indicate that carriers may not have entered expensive abandonment proceedings unless the weight of evidence strongly favored approval. There is little doubt that more rail mileage was maintained in rural areas, especially in the 1970s, than would have been maintained without Interstate Commerce Commission surveillance. This likely required cross subsidy, which was probably reduced by deferring maintenance and offering very limited scheduling of service on low-volume branch lines.

The negative impacts of railroad regulation on rural communities was also felt in the area of rail service. The decade of the 1970s was characterized by crises in rural transportation. Railroad earnings were extremely low in spite of high demand for rail services for transport of bulk products. Rural transportation crises had three rail dimensions: 1) shortages of freight cars, 2) delayed and interrupted service because of the condition of rail lines on which maintenance had been deferred, and 3) the abandonment of rail service on low density branch lines.

Deregulation

It became increasingly apparent in the 1970s that the market rules by which railroads were managed were not work-

With Staggers, a heavier weighting was given to the objectives of railroad profits for system development as well as system responsiveness to shipper and public needs through the market.

Railroads now are given a great deal of freedom to change rates . . .

ing. The bottom line was clearly unacceptable earnings by railroads in spite of the essential need for their services. Bankruptcies were frequent among carriers, and complaints by shippers of inadequate service were rampant.

Although concerns about the consequences of deregulation were expressed by agricultural and rural interests, the advocates of change prevailed. With Staggers, a heavier weighting was given to the objectives of railroad profits for system development as well as system responsiveness to shipper and public needs through the market. Substantially reduced priority was given to 1) shipper protection, 2) administrative control of potential monopolistic practices, and 3) maintenance of specific services that would not otherwise be maintained. These changes constituted a major modification in the legal framework of rights and obligations governing rail transportation markets.

Changes in market rules encompass both legislative changes and administrative interpretation, application, and enforcement of the new rules.

Legislative Changes

Legislatively, perhaps the most important changes were 1) limitations placed on the activities of rate bureaus in establishing rail rates, 2) authorization for shipper/carrier contracts allowing the tailoring of transportation services to the needs of individual shippers, 3) shifting of the burden of proof in contested rate and service proposals from the proponent to the opponent, and 4) reduced direct Interstate Commerce Commission surveillance of rate changes.

Railroads now are given a great deal of freedom to change rates, especially when origin and destination points both are on the lines of a single railroad company. Even when rates involve multiple-line tariff rates, freedom to establish rates has been substantially increased. Coupled with contracting authority, this provides nearly complete rate freedom.

Administrative Changes

Interpretations of Staggers Act provisions by the Interstate Commerce Commission and reinterpretations of regulatory mandates in previous legislation during the early 1980s further changed the character of regulation. Interpretations of Staggers provisions leading to reduced operating control over carriers are exemplified by the high degree of secrecy afforded shipper/carrier contracts and the frequency with which "emergency" procedures are used in implementing rate changes on shortened notification periods. Reinterpretations of previous rules are demonstrated in decisions involving lower rates for large shipments even when only one or a limited number of shippers could meet volume requirements for lower rates. Modified rate patterns providing reduced protection for the competitive position of small shippers were permitted just previous to passage of the Staggers Act. This indicated a change in the Commission's weighting of regulatory objectives away from protecting shippers against rate discrimination and toward allowing rail operating freedom for market adjustment and improved profit position for railroads.

A second example of the Commission-initiated deregulation involves merger and consolidation of rail lines. Significant consolidations have occurred in the past five years that likely would have been postponed or disallowed prior to 1980. The Staggers Act does not specifically address merger or consolidation policy, yet substantial change in policy may have occurred.

In summary, the combination of legislative and administrative changes has brought us from a position approaching Interstate Commerce Commission/railroad joint operational management of railroads, with additional restrictions applied through rate bureaus, to a position of almost complete reliance on market forces operating within "normal" regulatory prescription.

Impacts of Deregulation on Agriculture and Rural Communities

Concerns over rail deregulation impacts on the economies of rural and agricultural communities are many and varied. If, in fact, rail regulation was used as a tool to maintain low freight rates for agriculture, these rates would be expected to increase with deregulation. If rural community transportation service has been subsidized through internal railroad transfer of funds, these services would likely be terminated with deregulation. The probable result would be service cancellation (or declining service quality) and increased branchline abandonment. Reduced rail service, in turn, may require more trucking on rural roads and higher expenditures for rural road maintenance than a system of regulated railroad service.

Negotiated rail rates, secret contracts, and firm-specific rates may be expected to help large firms in population centers and perhaps put firms located in smaller rural areas out of business. Larger shippers, generally located at points served by more than one railroad, may have additional negotiating power based simply on the fact of multiple-carrier rail service. Concerns also have been expressed that small shippers may be discriminated against as a result of rate negotiations among large shippers and large railroads.

In the following sections we will review several post-deregulation studies that address the impacts of deregulation on rural agricultural communities.

Rail Transport Rates for Agriculture

Since grain is the major agricultural product shipped by rail, it has been the focus of analyses of pre- and post-Staggers rail rates. Impacts of rail deregulation are not observed in a closed environment, and hence must be evaluated as one of several simultaneous events affecting rail transportation. For

If rail regulation was used as a tool to maintain low freight rates for agriculture, these rates would be expected to increase with deregulation.

Since contract shipping rates aren't available, studies on the impacts of railroad deregulation have looked at how much grain prices increase between the grain elevator and some point of delivery like Chicago or Houston. . . . transportation costs are the major factor in determining the difference in grain prices in different localities.

example, supply/demand conditions in rail transportation markets changed significantly almost simultaneously with deregulation. Rail carrying capacity for grain, which was expanding in 1980, reached its peak in 1982. However, volume of grain carried was 12 percent below 1980 in 1981 and 16 percent below in 1982.[3] Transport technology and cost relationships also have changed. Grain traffic was in a transition from single-car shipment to trainload shipment in 1980. At that time, the transition was further along in corn and soybean shipping areas than in Great Plains wheat areas.

A Substitute Measure for Contract Rates

It is also difficult to examine the effects of deregulation because contract rates are not public information. The Association of American Railroads (1985) reports that 57 percent of rail grain traffic moved under contract arrangements in 1985.

Since contract shipping rates aren't available, studies on the impacts of railroad deregulation have looked at how much grain prices increase between the grain elevator and some point of delivery like Chicago or Houston. Researchers compare this "spread" before and after deregulation because transportation costs are the major factor in determining the difference in grain prices in different localities. For example, transport cost is frequently as much as 80 percent of Kansas/Gulf price spreads on wheat.

Three studies of price spread changes from Great Plains origins to markets outside the Great Plains in pre-Staggers and post-Staggers periods report very similar results. A Nebraska study analyzed changes in price spreads on corn and soybeans between 20 Nebraska elevators and Chicago futures contract prices. In the post-Staggers period (November 1980 through August 1984), local prices for corn increased relative to the Chicago futures prices by about 23 cents per bushel. In the pre-Staggers period, November 1978 through October 1980, in spite of rail rate declines, soybean prices at Nebraska local points increased 27 cents per bushel relative to Chicago.[4]

A Kansas study[5] involved a detailed analysis of price spreads for wheat between 14 local Kansas elevators and export prices at Houston, Texas, from January 1977 through December 1984. A similar analysis was made of price spreads between the same local markets and Kansas City. In Kansas to Houston movements, price spreads increased by 38 cents per bushel from January 1977 through December 1980. In the subsequent four years (January 1981 through December 1984), price spreads decreased by 35 cents per bushel. The spread between local Kansas points and Kansas City increased by 14.8 cents per bushel in the pre-Staggers period and decreased by 17.6 cents in the post-Staggers period of equal length. In each case, changes in price spreads closely correlated with changes in rail rates for grain traffic. An abrupt change in direction of movement in rates occurred in the first quarter of 1981.

In the rate decrease period, the pattern of rail rate changes demonstrated an action-reaction pattern suggesting significant new competition among railroads and perhaps between individual railroads and truck-barge combinations in moving grain. The pattern of rate changes was appreciably different in the post-Staggers period from the pre-Staggers period when rate bureaus held a more dominant position in railroad rate making.

A Texas study[6] analyzed price spreads for wheat between 12 Kansas and Texas points and the Gulf. Multiple regression was used in an effort to identify and measure the effects of several factors on price spread changes over the period 1976 through 1985. Independent variables included grain demand and supply shifters, marketing service demand shifters, and supply of marketing services. Dummy variables were used to identify various regions and a dummy variable and an interaction term were used to identify the impact of deregulation.

The results for wheat were similar to those of other studies involving Great Plains origins. Wheat spreads increased before Staggers and decreased thereafter. When the effects of other factors had been sorted out, the remaining decline in spread from 1981 through 1985 attributable to deregulation was 33 percent of the 1980 spread. This was about 25 cents per bushel.

The Cartel Hypothesis

Another source of downward pressure on rail rates is increased inter-rail competition following Staggers. Pre-Staggers pricing of grain traffic in the Great Plains may have permitted operation of a successful cartel by railroads working through rate bureaus.[7] Reduced rate surveillance by rate bureaus probably has increased flexibility in railroad pricing, allowing railroads to compete more effectively with barges, as suggested by another study.[8]

In support of the view that railroads are now more competitive is the fact that grain rates between northwestern Kansas and established markets have fallen relative to rail costs since 1980.[9] Ratios of revenue to full costs of railroads fell from 1.59 in 1980 to 1.37 in 1982 and to 1.17 in 1984. The 1980 ratio is consistent with revenue/cost ratios for Great Plains grain shipment in earlier studies. For example, a study in the *North Central Journal of Agricultural Economics* reported the pre-

Reduced rate surveillance by rate bureaus probably has increased flexibility in railroad pricing, allowing railroads to compete more effectively with barges . . .

A cross-section analysis of 1983 waybill rates for corn, soybeans, and wheat showed that rate changes since 1980 were directly related to the extent of competition among railroads . . .

Staggers ratio of rail revenue to rail variable costs for grain shipments to be 1.67 in the Great Plains region.[10]

A 1986 study cites other evidence of increased interrail competition in the post-Staggers period. A cross-section analysis of 1983 waybill rates for corn, soybeans, and wheat showed that rate changes since 1980 were directly related to the extent of competition among railroads for grain originating in any given crop reporting district: "Rates fell by 8-15 percent as we moved from monopoly to two equal-sized railroads and by another 5-11 percent as we moved from two to three."

The author, James MacDonald, also concluded that railroads in the Plains maintained an effective cartel in the regulatory era, with actual rates as high as a monopolist would have set them. On the other hand, in the Corn Belt coordinated action among railroads could not raise rates very high because other modes of transportation were competing with the railroads.[11]

Cartel activity is more effective when demand is inelastic, as is probably the case in rural areas, where the alternatives to rail transportation are least effective. Income benefits from deregulation have accrued to Plains areas and to the small rural communities that those areas encompass. In rural areas where grain could also be shipped by truck or barge, rail rates had to be competitive, even under regulation, and they more nearly approached railroad variable costs. Post-Staggers rate benefits in areas where there has been competition among grain haulers have been less pronounced, if not altogether absent.

Rail Service to Rural Communities

Three dimensions of rail service are important to rural communities and potentially related to regulation. These dimensions are: 1) preservation of rail lines, 2) service quality on lines serving rural communities, and 3) relative rates charged for rail service. Taken together, they largely determine the competitive positions of rural communities in rail-dependent commerce.

Preservation of Rail Lines

The Staggers Rail Act did not make major changes in Interstate Commerce Commission control or control criteria for rail line abandonment, but it did bring changes in abandonment procedures. The Act provides that unprotested abandonments be permitted 75 days after application. Protested but uninvestigated abandonments are permitted 120 days after application. If investigated, abandonments are permitted in 195 days and if protested, investigated, and appealed, in 255 days. This has shortened the time period from application to decision. Since no other conditions have changed, legislative changes would appear to have had little impact on rate of abandonment. Changes in the Interstate Commerce Commission's administrative handling of abandonment applications conceivably could have affected the abandonment rate, but reported rail traffic conditions in the 1970s pointed to major abandonments in the 1980s.

Economies of traffic density are present in railroad operations.[12] This relationship causes unit costs to be higher on low-traffic-volume lines than on high-volume lines. The result is concentration of traffic on major lines. Twenty percent of railroad route miles produced 67 percent of all rail ton-miles, and 33 percent of railroad route miles produced only 1 percent of rail traffic. In 1977, 30 percent of total route miles in 12 midwestern states carried less than one million gross ton-miles of traffic annually.[13] The stage thus was set in the 1970s for very substantial abandonment of rail lines in the 1980s, whether rail deregulation occurred or not.

National rail abandonment has accelerated sharply in the past ten years (Table 1). From 1975 through 1984, 40 thousand miles (21 percent) of 190,000 miles in operation in 1975 were abandoned.

Table 1
U.S. Rail Line Abandonment

Years	Miles
1965-1969	4,842
1970-1974	6,854
1975-1979	16,334
1980-1984	23,717

Quality of Rail Service

Quality of rail service on existing lines in rural communities has received much less study than cases in which the total line and accompanying service have been abandoned. Complaints of freight car shortages have not been heard as frequently or as forcefully since deregulation as in the pre-Staggers period. This may reflect a relative supply/demand condition in rail transportation markets since 1980 and may not necessarily represent a better service capability of carriers. On the other hand, substantially more flexibility in management of rail service may have increased the railroads' abilities to deal with conditions such as service supply shortages in peak demand periods. If so, that aspect of service may be improved.

A survey of Kansas shippers conducted at the University of Kansas in November 1985 indicated that fewer small firms reported improved overall rail service than worsened service following deregulation. Except in quality of railroad cars supplied to the shipper, more shippers reported worse performance by rail-

. . . legislative changes would appear to have had little impact on rate of abandonment. Changes in the Interstate Commerce Commission's administrative handling of abandonment applications conceivably could have affected the abandonment rate, but reported rail traffic conditions in the 1970s pointed to major abandonments in the 1980s.

. . . the extent of service subsidy in rural areas before deregulation may have been overstated.

roads after deregulation. Overall improvement was reported by 18 percent; reduced overall service quality by 35 percent; and no change by 47 percent. Lower quality service after deregulation was indicated by survey respondents in promptness of service (43 percent), availability of service (34 percent), reliability (33 percent), and adjustment of claims (25 percent). In contrast, more shippers reported improved truck service (35 percent) after deregulation than reported reduced truck service quality (14 percent).[14] A current study at Kansas State University of transport issues in the Kansas livestock slaughtering industry indicates that the quality of rail service has not increased since deregulation to a point of providing competition for trucks in the distribution of fresh meat.

Evidence on quality of rail service in rural communities in the post-regulation period is thus limited and, to a degree, conflicting. Service quality is likely to reflect transport markets, varying with changing supply-demand conditions. Failure to identify regulation-related changes in rail service quality in the post-Staggers period does suggest, however, that the extent of service subsidy in rural areas before deregulation may have been overstated.

Rural-Urban Rail Transport Rate Relationships

Many aspects of rail rate changes following Staggers remain to be explored. Conventional wisdom has led to the hypothesis that after Staggers rates from rural origins would increase more (or decrease less) than those from urban origins for two reasons: 1) urban shippers have more alternatives and, hence, more competitive bargaining strength in a transportation market and 2) rural markets had been subsidized before Staggers.

A 1985 study found that rail contracts for wheat shipment from Kansas elevators to the Gulf of Mexico in 1981 through 1983 were four cents per hundredweight cheaper from urban areas than from rural areas.[15]

A survey of local grain elevators in Kansas in 1986 supports the presumption that contracts between elevators and shippers, allowed since deregulation, would not benefit rural interests. Sixty-four percent of respondents indicated that the use of rail-shipper grain rate contracts had a negative impact on the elevator's competitive position; 26 percent indicated a positive impact; and 10 percent reported no change.[16]

As indicated earlier in this paper, MacDonald found that rail rates for grains decreased more when two railroads served points in the same crop-reporting district than when only one railroad served, and they decreased even more when three railroads competed for the traffic.

In none of the studies has the question of impact of relative rural-urban rates been directly addressed. However, relative rate changes since deregulation may work to the disadvantage of many small rural communities and to the possible advantage of urban communities where the larger shippers are located. Unequal rate changes among competing local grain origin points contribute to competitive disadvantage for some.

Summary

Economic literature characteristically suggests that federal government regulation provides special protection for rural communities that possess neither the economic muscle nor perhaps the expertise to deal effectively with providers of essential services. Services in rural communities frequently can be provided only at higher cost than in urban settings. Regulation sometimes reduces differences in customer charges between rural and urban users, whether generated by a weak bargaining position or high costs.

Agriculture and rural interests were active in bringing about railroad regulation a century ago. Alleged benefits to rural communities from that regulation include preferential freight rates and cross-subsidy that maintained unremunerative service. Neither pre-Staggers rate analyses nor post-Staggers changes in rail rates suggest differential benefits of regulation for agriculture or for rural communities. Analysis does indicate that Great Plains grain shippers were at a disadvantage before deregulation and have benefited from significant reductions in rail rates since deregulation.

Statistics on rail line abandonment show no evidence of greater abandonment in midwest or southeastern agricultural states than in nonagricultural states. Some midwest states had high abandonment rates in the 1965-1984 period (e.g., Iowa). Others had rates below the national average (e.g., Kansas). Nationally, rail mileage was reduced by 25 percent from 1965 through 1984. Much of this mileage served small rural communities. Typical abandonments have been rail branch lines of less than 50 miles. A definite linkage between rates of rail abandonment and deregulation has not been established.

Available evidence on relative rail rate changes in grain shipment suggests a disadvantage for smaller rural communities. One study found higher contract rates for shipments from rural areas than from urban areas.

Hypothesized loss of special benefits of regulation of railroads for agriculture and rural communities has not occurred because those benefits largely did not exist. Realignments in competitive positions of rural communities and regional economies are occurring because of changes in competitive conditions for rate setting in the railroad industry and because of changes in transaction rules for individual shipper-carrier contracts. Some small

. . . relative rate changes since deregulation may work to the disadvantage of many small rural communities and to the possible advantage of urban communities where the larger shippers are located.

Neither pre-Staggers rate analyses nor post-Staggers changes in rail rates suggest differential benefits of regulation for agriculture or for rural communities.

shippers identify net benefits from railroad deregulation, whereas others recognize disadvantages. Structural changes in rail service to agricultural industries, which were under way in the last half of the 1970s, may have accelerated in the first half of the 1980s.

Notes

[1] Richard K. Hart, "An Investigation of Discrimination in the Rail Rate Structure with Emphasis on the Regional Incidence in the Missouri Basin Area of the Great Plains," dissertation, Kansas State University, Manhattan, Kansas (1970).

[2] Richard A. Posner, "Taxation by Regulation," *The Bell Journal of Economics and Management Science* 2(1):22-50 (1971).

[3] Stephen Fuller, James MacDonald, Michael Wohlgement, and David Bessler, "Effect of the Staggers Rail Act on Export-Grain Transportation Rate Structure," unpublished paper, Texas Agricultural Experiment Station and ERS, USDA (1986).

[4] Brian D. Adam and Dale G. Anderson, "Implications of the Staggers Rail Act of 1980 on Level and Variability of Country Elevator Price Bids," *Proceedings of the Twenty-sixth Annual Meeting of Transportation Research Forum* 26(1) (1985).

[5] Keith A. Klindworth, L. Orlo Sorenson, Michael W. Babcock, and Ming H. Chow, *Impacts of Rail Deregulation on the Marketing of Kansas Wheat* (Washington, DC: U.S. Department of Agriculture, Office of Transportation, 1985).

[6] Fuller, MacDonald, Wohlgement, and Bessler, "Effect of the Staggers Rail Act on Export-Grain Transportation Rate Structure."

[7] Ming H. Chow and L. Orlo Sorenson, "Railroad Pricing in Grain Transportation Markets: A Kansas Case Study," contributed paper, Annual Meeting of the American Agricultural Economics Association, August, 1986, Contribution No. 86-454-J, Kansas Agricultural Experiment Station, Kansas State University.

[8] James M. MacDonald, "Developments in Grain Rail Rates and Services Since Deregulation," *Transportation and Competitiveness of U.S. Agricultural Products in World Markets—A Research Symposium* (Washington, DC: U.S. Department of Agriculture, Economic Research Service, 1986).

[9] Chow and Sorenson, "Railroad Pricing in Grain Transportation Markets."

[10] Stephen Fuller, Larry Makus, and Merritt Taylor, "Effects of Railroad Deregulation on Export Grain Rates," *North Central Journal of Agricultural Economics* 5(1) (1983).

[11] MacDonald, "Developments in Grail Rail Rates."

[12] Robert H. Harris, "Economies of Traffic Density in the Rail Freight Industry," *The Bell Journal of Economics* (1975).

[13] Dale G. Anderson, Marc A. Johnson, and L. Orlo Sorenson, "Rail Line Abandonment in the North Central Region," Kansas Agricultural Experiment Station Bulletin 627 and North Central Regional Publication 249, Manhattan, Kansas (1979).

[14] Douglas H. Houston, "Rural Kansas Confronts Deregulation," *Kansas Business Review* 10(1):1-9 (1986).

[15] Klindworth, Sorenson, Babcock, and Chow, *Impacts of Rail Deregulation.*

[16] L. Orlo Sorenson, "Competitive Impacts of Railroad Rate Contracts on Grain Shippers in Kansas," unpublished paper, prepared for the Interstate Commerce Commission (1987).

Comments

Drew Collier is assistant general sales manager for Union Pacific Railroad Company. He has been involved in ratemaking during the transition from the regulated to the deregulated environment.

In his paper, Professor Sorenson referred to the "cartel" aspects of rate bureaus, which implied that rates were set as high as if there were a monopoly. I would argue that protection of the least efficient carrier or group of carriers in the involved area led to these rates. Under rate setting by rate bureaus, any rate established had to be applied uniformly to avoid discrimination. This uniform application could result in the same revenue compensation being established in very economically dissimilar situations. The end result was to restrict innovation.

Along with Professor Sorenson, I disagree with Friedlaender whose study indicates that railroads have accepted low freight rates on agricultural commodities in exchange for high rates on manufactured goods. In my experience such cross-subsidy is not "accepted." Rather, rates are set by rate bureaus reflecting what market conditions will allow. I know of no process within the railroads in terms of strategy development that would "accept" such cross-subsidation. In my experience, pricing based on what the market will bear is the only way to ensure revenue adequacy for the rail carriers. A conversion to cost-plus pricing would limit the flexibility necessary to treat specific market conditions and could hurt both rural and urban areas, particularly in agricultural products where margins are historically low.

Professor Sorenson refers to the regional "discrimination" that results from value-of-service pricing, and this situation does exist. It should be noted, however, that any regional price discrimination or differential has to be balanced against product or source competition affecting that region. Discrimination that renders a producing region non-competitive serves no purpose for the rail carrier serving the region.

I also want to touch on the issue of branch-line abandonment. Branch lines are considered for abandonment when revenues generated from that branch do

Hypothesized loss of special benefits of regulation of railroads for agriculture and rural communities has not occurred because those benefits largely did not exist.

. . . rates set by rate bureaus reflected what market conditions would allow.

not cover cost of operations. The trend is to try to sell these branch lines to third-party operators as an alternative to abandonment. These outside parties often can turn around a branch line by using non-union labor or other cost saving techniques that a major rail carrier cannot employ. It is also important to point out that movements off branch lines in grain producing regions such as this are often from country elevators to terminal elevators under transit arrangements. The storage in transit of grain is the cornerstone of many railroads' marketing strategies, and accordingly those movements off branch lines have a greater significance that needs to be considered in any branch line abandonment or sale decision.

If there is one benefit from deregulation that could be isolated as the most significant, it would be the ability to enter into contracts. This ability to tailor transportation packages to specific situations has resulted in more innovation in rate making in many areas. Professor Sorenson refers, however, to a survey of local grain elevators in Kansas wherein 64 percent of respondents indicated that use of rail-shipper grain rate contracts had a negative impact on the elevator's competitive position. But only 21 percent of respondents had signed rate contracts. If a real versus perceived impact exists, it may be due to the lack of knowledge or desire on the part of those operators of local elevators to deal in a deregulated environment. Those shippers not enjoying the benefits of contracting may not have yet made the transition to dealing in a free-market environment. They may be looking for protection or relief from a perceived competitive disadvantage through the same regulatory process that they assumed protected them in the past. They may be better served by communicating directly with the railroads their view of their competitive position and attempting to negotiate a contract to cover their own situation. I would venture to say that most railroads would welcome this dialogue.

In conclusion, I would like to point out that many of us who were involved in strategic development in the regulated environment had serious concerns regarding the effect of deregulation. New skills and perspective had to be acquired, and new ways of doing business had to be developed. However, now that that transition has been accomplished, we would not chose to go back. I believe most shippers who have also made the transition successfully would agree.

Walter J. Armbruster is associate managing director for Farm Foundation, Oak Brook, Illinois

Larger shipments appear to be necessary for shippers to take advantage of favorable rail rates in a deregulated environment. This tendency may exacerbate current concern about the future of a number of small rural communities, particularly in the Great Plains states and the upper Midwest. A number of observers have noted the current consolidation taking place in businesses providing services to agriculture and rural people. And there is increasing concern over the economic viability of some communities. Professor Sorenson's analysis implies that pressures to consolidate are being increased by rail transport changes. The role of deregulation of rail transportation as a contributing factor to ongoing structural change in rural communities is difficult to sort out. Short-term disruptions during the interim adjustment periods may be significant but are generally not analyzed.

The question of whether increased truck services to the communities facing competitive disadvantages in rail shipments can offset these impacts is important. However, in the deregulated environment, as Professor Sorenson points out, the economics of competing transport modes and demand for services will determine the future transport availability to rural communities and agricultural shippers.

The implication for public policy is that there is a need to identify opportunities enabling rural people and agricultural interests to compete in an economic environment demanding that attention be paid to the cost of doing business. Transportation is one key cost element that deserves close scrutiny. Are there overriding welfare implications that require or indicate the need for policies to partially offset disadvantages of smaller rural communities in the deregulated environment? Are there locations where sufficient truck or barge competition does not exist to provide restraint on rail transport rates or encourage service, especially where rail mergers occur? What are the potential long-run effects of rail mergers? Are there policies in place that hinder necessary adjustments in rail transport rates and services?

The proper stance for rural communities may be to examine carefully any policies that may have negative impact on their ability to attract economically viable rail service and to eliminate or modify them. Competition between sectors serving rural transportation needs will likely result in a level of service to rural communities that is economically efficient. If there are economic welfare issues that indicate an important need to override economic efficiency criteria and provide rail service regardless, then ways must be found to provide the necessary subsidies to encourage, or regulations to require, provision of those services. But, as Professor Sorenson's analysis suggests, needs for such subsidies may often be exaggerated in attempts to justify them on an economic basis.

John A. Grygiel is assistant vice president-traffic for the Atchison, Topeka and Santa Fe Railway Company.

One of the more astute observations Professor Sorenson made is that the objectives of railroad regulation were not

Discrimination that renders a producing region non-competitive serves no purpose for the rail carrier serving the region.

. . . the objectives of railroad regulation were not compatible with each other, particularly in the post-World War II marketplace.

compatible with each other, particularly in the post-World War II marketplace. By 1980 the conflict between the regulatory objectives of ensuring adequate carrier profitability and operation of vital services had never been greater.

As we approached Staggers, many of the forces affecting rural communities had also impacted rail carriers. The Carter embargo, global competition in agribusiness (as well as other industries), currency fluctuations that made U.S. goods more costly, and high interest rates caused uncertainty for agribusiness at the community level. These forces made rail transportation a risky venture as well. The Staggers Act brought formal recognition that a railroad cannot exert monopoly power in the 1980 marketplace.

The common thread of the several objectives of regulation was the necessity of protecting the public. But as Professor Sorenson points out, the intended benefits of regulation in the rural community were not being realized. Low earnings in the face of high demand, irregular equipment availability, and deferred maintenance all indicated that carriers could better serve their customers by having greater freedom and the ability to contract for traffic.

Professor Sorenson alleges operation of a cartel by grain hauling rail carriers permitted through rate bureaus, which were monitored by the Interstate Commerce Commission under Reed-Bulwinkle. But by the time Staggers was enacted, most carrier rate actions were being accomplished by independent action and not through collective rate bureau action. And even when a carrier took independent action on behalf of its own shippers, it often took long, hard efforts to obtain I.C.C. approval. The Southern Railway Big John Hopper Case is an example. Ironically, rail carrier independent actions have caused more inequity among rural communities than collective bureau rate adjustments. Independent actions of competing carriers lead to frequent regional rate disparities.

Further, the low return on investment and the crises in rural transportation cited by Professor Sorenson contradict allegations of cartel behavior. In a cartel atmosphere, carriers would invest to ensure capability of handling all available freight at highly profitable rate levels. In reality, equipment shortages, deferred maintenance, and abandonments do not smack of cartel behavior. The unfortunate truth is that rural communities may have suffered rail crises, but the reasons relate to intense competition and lack of available rail resources to devote to shortcomings in equipment, maintenance, and service.

The major thrust of deregulation from our standpoint was to permit us to compete more directly with trucking and barge companies. This was and is a critical issue. In looking beyond the immediate impact of competition, we need to assess how, over the long run, we would maintain our position in the agribusiness distribution pipeline and specifically how we would be able to maintain our grain gathering network that emphasized storage and milling-in-transit. Deregulation opened up new avenues of competing and preserving our position, which in Santa Fe's case translates to maintenance of service at rural communities on branch lines. The bulk of Santa Fe grain originates on its branch lines. The erosion of traffic from these lines was a concern when Staggers came into being, and still is today, more than seven years later.

I would certainly agree with Professor Sorenson that deregulation has led to reduced rail rates. While the several studies referred to in the paper indicate varying degrees of rate reduction, the amount of reduction for Santa Fe for wheat, our primary whole grain, has been 22 percent between 1980 and 1986. In constant dollars, the reduction is over 40 percent. Kansas State and Iowa State research that Santa Fe has participated in has shown that savings do reach back to the country elevator.

The impact of rate reductions on the rural community has been mixed at best. First and foremost is the ability of the farmer to sell grain. In that respect, the decline in exports has affected the community far more than rail deregulation. There has to be a market before the railroad can get involved. To the extent that rates were the difference between sale or no sale, then the rural community would probably look at deregulation positively.

Further impacting rural communities are service innovations designed by carriers to reduce cost and improve density of traffic. Santa Fe has been involved in the development of multiple car loading terminals, operation of 120-car grain trains, negotiation of trackage rights, negotiation of station exchanges with other carriers, and management of an equipment pool.

In an initiative last year, we wrote to the management of the country elevators we serve in Kansas requesting they give us the opportunity to meet the truck rates to the points we serve. While we have not been one hundred percent successful, we have gotten their attention. One firm advised us that at the insistence of country elevators they were compelled to quote rail delivered prices—something they had not done for five years. This is an example of how deregulation allows a cooperative effort between rail carrier and rural elevator for mutual benefit.

The flip side to these initiatives is failure to retain or attract traffic. It may be that branch and non-core main lines of various western railroads will be sold to firms that will be in a better position to serve the rural community through lower operating cost structures. This could in fact be very beneficial for the rural community. A multitude of short lines have been created since deregulation. Good examples are the Kyle; the Chicago, Central and Pacific; and the MidSouth. Acting as feeders, these lines have shown that they can thrive by serving the rural community.

Change is an inevitable fact of life, whether rail carriers are regulated or not, and the face of railroading in rural communities will continue to adapt to market demands. Given a cooperative effort between carriers and their rural customers, rural communities have the opportunity to retain rail service.

The Kansas Brain Drain Revisited: The Case of K.U. Engineering Graduates and National Merit Semifinalists

David Burress

Dr. Burress is a research economist at the Institute for Public Policy and Business Research.

In the last issue of this review, I discussed U.S. Census data on the extent of the brain drain, or out-migration of young workers, from Kansas during 1975-1980.[1] I concluded that there was a continuing loss of human capital from Kansas to other states, but when we accounted for young workers moving into the state, we found that *net* out-migration was a small fraction of gross out-migration and an even smaller fraction of the work force. In this article I will deal more directly with two recent articles, one by the *Wichita Eagle-Beacon* and another by Steve Thomas, which reported rather large rates of gross out-migration for National Merit semifinalists and K. U. engineering graduates, respectively. The results of the two studies seemed alarming, but they were actually inconclusive because they didn't report any *net* rates of out-migration. This article will provide my estimates of the net rate of out-migration for the two groups. My estimates depend on a critical assumption that Kansas migration patterns have remained relatively stable in the recent past; therefore I begin by exploring this assumption.

Engineering Graduates and the Stability of Kansas Migration

My point of departure for analyzing changes over time is the 1980 census, which showed that 33.3 percent of persons attending college in Kansas in 1975 had moved away by 1980.[2] Steve Thomas's data for K.U. engineering graduates show that 55.1 percent moved away between 1979 and 1983.[3] We know that this figure overrepresents outmigration of college graduates because out-of-state students are more likely to leave when they graduate than native Kansans, and the K.U. School of Engineering has a larger-than-average percentage of out-of-state students. If we weight the engineering data to make them comparable to census data as far as the percent of out-of-state students, they indicate that 45.7 percent of Kansas engineering graduates would have left Kansas between 1979 and 1983. These data may mean that the gross rate of out-migration increased somewhat from 1975-1980 to 1979-1983. Or they may mean that K.U. engineers are more likely to out-migrate than other students. Given that K.U. engineering students have higher average human capital than other Kansas students, and given (as shown in my previous article) that out-migration rates from Kansas increase with human capital, the latter interpretation seems more persuasive. In other words, these data do not show that out-migration became a larger problem in Kansas during the 1980s than it was in the 1970s.

In fact, Thomas interpreted some of his data as showing that out-migration actually fell off between 1978 and 1983. In particular, native Kansan engineering students who had moved away by 1984 were a roughly constant 45 percent of the graduating classes of 1978 through 1980. Then between 1980 and 1984, the gross out-migration rate declined by about 6.5 percent each year, falling to 23 percent for the class of 1983. In my view, however, the simplest interpretation of these data would be that migration patterns were stable and that 23 percent of native engineers move away during their first year after graduation, and an additional 6.5 percent move away during each of the next three years. Thereafter, the remaining engineers are likely to move away at a much lower annual rate.

Other Evidence on Stability

The Census Bureau's decennial reports, corresponding to *Geographical Mobility*, reveal a slowly-changing long-run migration pattern in Kansas over the past 50 years. Kansas has experienced a net outflow to other states in each sample period. The gross outflow to other states has remained roughly constant, at around three hundred thousand persons per five-

. . . these data do not show that out-migration became a larger problem in Kansas during the 1980s than it was in the 1970s.

year period. However, the *net* outflow to other states has declined rather steadily, from a peak of 111,060 persons during 1935-1940, to a low of 12,657 persons during 1975-1980.[4] At the same time, the number of foreign migrants to Kansas grew steadily (closely following national trends), from a gross inflow of 1,134 persons during 1935-1940, to 30,483 persons during 1975-1980. There are no records on out-migrants from Kansas to foreign countries.

Some of these trends are tracked into the 1980s, with more information but less reliability, in other U.S. Census publications.[5] I interpret these data as showing that net migration has consistently been a very small fraction of gross migration, at times positive, at times negative, during the past 15 years. The data do not demonstrate any large instability in recent Kansas migration patterns.

The Relationship Between Net and Gross Out-Migration

In my previous article I calculated net out-migration as a fraction of gross out-migration for several categories of young workers during 1975-1980. Some of these results are collected below in Table 1. The table gives detailed breakouts for selected categories of persons with higher-than-average amounts of human capital. For these categories, the ratios fall into a relatively narrow range between 15 and 28 percent. This implies that gross out-migration is a reasonably good proxy for net out-migration among high human capital groups. Under the assumption that migration patterns have been stable, these ratios can used to translate gross out-migration rates measured during the 1980s into net rates.

The Net Out-Migration of Engineering Graduates

In particular, if we are willing to assume that native engineers are similar to all college students, then from Table 1 the net rate is 21 percent of the gross rate. If so, then Thomas's 35.3 percent gross rate for native engineers translates into a 7.4 percent net rate. Alternately, if native engineers are similar to young technicians, then the net rate is a (somewhat higher) 27.8 percent of the gross rate, or 8.3 percent. Finally, if they are similar to young professionals, then the resulting net rate would be 6 percent. In summary, it seems reasonable to believe that about 6 to 8 percent of native Kansan engineering graduates of the University of Kansas will leave the state within a five-year period and not be replaced. Since there are around a hundred such new graduates each year, this net loss amounts to less than ten persons per year.

Table 1
Net Out-Migration as a Percent of Gross Outmigration Between 1975 and 1980

Persons 25-34 in 1980 by 1980 Characteristic		Percent
Income:	10,000-14,999	16.2
	15,000-19,999	19.0
	20,000-24,999	22.2
	Greater than 25,000	15.8
Employed:		14.9
	Managerial	18.4
	Professional	16.9
	Technician	27.8
College:	4 years	14.9
	5 + years	24.3
All persons	25-34 in 1980	11.7

Source: David Burress, "The Kansas Brain Drain Revisited: The Case of College Students and Young Workers," Kansas Business Review 10(3):1-5 (1987).

National Merit Semifinalists

National Merit semifinalists are an especially elite group. The National Merit Scholarship Qualifying Test is taken by high school juniors across the country, and semifinalists are considered to have extraordinary academic potential. Therefore none of the previous data are entirely comparable to the data gathered for the 1986 *Wichita Eagle-Beacon* articles on the Kansas brain drain.[6] Nonetheless, I will attempt an interpretation that allows me to estimate a net outflow.

Earners of Out-of-State Advanced Degrees

First, I would like to separate the Kansas semifinalists who go to school out-of-state to earn advanced degrees, because the data show that we are more likely to lose these people than the rest of the semifinalists. Gross out-migration of this group needs to be further adjusted. The *Eagle-Beacon* surveyed 1970-1980 semifinalists in 1985 and found 35 percent had earned advanced degrees. Since earning an advanced degree requires six to 12 years of study, I estimate that at least 20 percent more will complete advanced degrees, making a total of 55 percent. Table 2 shows how I used the *Eagle-Beacon* results to calculate gross out-migration for Kansas semifinalists who earned their degrees out-of-state.

Given the 85 percent gross outflow rate for earners of out-of-state advanced degrees, we can use census data to determine a net rate. Net out-migration is 24.7 percent of gross out-migration for young workers with five or more years of education. If they are comparable to this subgroup of semifinalists, then the net flow is $0.247 \cdot 0.85 = 21$ percent. If we assume instead that this group is similar to the more highly mobile technicians, then the net loss rate would be 24 percent.

Table 2
Gross Out-Migration
Kansas Semifinalists Who Earned Out-of-State Advanced Degrees

1,359	total sample
x .55*	
746	have earned or will earn advanced degrees
x .62	
462	have earned or will earn them out-of-state
x .85	
393	will not return

*Thirty-five percent found by the survey to have earned advanced degrees plus an estimated 20 percent who had not yet had time to complete their advanced studies.

Source: *Wichita Eagle-Beacon*.

. . . it seems reasonable to believe that about 6 to 8 percent of native Kansan engineering graduates of the University of Kansas will leave the state within a five-year period and not be replaced. . . . this net loss amounts to less than ten persons per year.

Table 3
Gross Out-Migration
Other Kansas Semifinalists (Those Who Do Not Earn Out-of-State Advanced Degrees)

1,359	total sample
− 462	have earned or will earn out-of-state advanced degree
897	total others
790	out-migrants in the total sample
− 393	out-of-state advanced degreees and will not return
397	other out-migrants

397 ÷ 897 = .44 = gross out-migration rate

Source: *Wichita Eagle-Beacon* and Table 2.

All Other Semifinalists

When we consider the remaining Kansas semifinalists, all those who did not and will not go out-of-state to earn advanced degrees, from the *Eagle-Beacon* data we find a gross out-flow rate of 44 percent (Table 3). Using census data to find the relationship between gross outflow and net outflow, we find net outflows of 7.4 percent if the semifinalists' migration patterns are like those of young professionals and 12.2 percent if they are like technicians'.

Net Outflows for National Merit Semifinalists

Putting the two pieces of the sample back together, we can now estimate the overall net out-migration rate for semifinalists as (0.55)(0.21 to 0.24) + (1 - 0.55)(0.074 to 0.122), or about 15 to 19 percent. This is far less than the reported gross rate of 58 percent. It amounts to only about 35 semifinalists per year. However, these are the best and the brightest young people in the state, and the loss is both real and symptomatic.

Table 4
Kansas Interstate Migration During the 1980s: Summary of Estimated Net Out-Migration Rates

Subgroup	Percent
Native Kansan K. U. Engineering Graduates	6-8
National Merit semifinalists:	15-19
Receiving advanced degrees out of state	21-24
Others	7-12

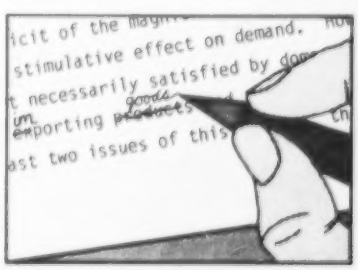
Conclusions

The appropriate loss rates for measuring the brain drain are the net rates, which correct for in-migrants (Table 4). The highest net loss rate I estimated for any group was 21 to 24 percent, which was for Merit semifinalists who received advanced degrees out-of-state. This and other net rates I estimated are much smaller than the corresponding gross rates cited in the Thomas and *Eagle-Beacon* articles.

There is no evidence that the problem has grown substantially better or worse since the 1970s. The simplest interpretation of the data is that the brain drain has remained about the same as it was during 1975-1980. The brain drain is a real problem. However, it is a problem Kansas has managed to live with for some 50 years, or perhaps longer.

Notes

1. David Burress, "The Kansas Brain Drain Revisited: The Case of College Students and Young Workers," *Kansas Business Review* 10(3):1-7 (1987).
2. *Geographical Mobility for States and the Nation*, 1980 Census of Population, U.S. Department of Commerce, Bureau of the Census, Publication PC80-2-2a, Table 9.
3. Steve Thomas, "K.U. Engineering Graduates and the Brain Drain," *Kansas Business Review* 10(1):14-16 (1986).
4. References not otherwise cited are to *Geographic Mobility*.
5. Bureau of the Census, U.S. Department of Commerce, *State Population Estimates, by Age and Components of Change: 1980 to 1984*, Current Population Reports, Population Estimates and Projections Series P-25, No. 970; and Bureau of the Census, U.S. Department of Commerce, *Annual Estimates of the Population of States: July 1, 1970 to 1979*, Current Population Reports, Population Estimates and Projections Series P-25, No. 876.
6. Susan Freinkel, "State Seeks to Stem Loss of Top Students," *Wichita Eagle Beacon*, February 10, 1986. Susan Freinkel and Al Polzinski, "Bright Young Kansans Slipping Away," *Wichita Eagle- Beacon*, February 9, 1986.



Research Note

The Impact of Economic Change in the Flint Hills

In both poetry and prose, the Flint Hills region has been portrayed as an area that has withstood the intrusions of man. They "... present the same sublime form and spirit that was theirs in the dawn of the race ... the Hills are changeless and unchanging."[1] From a physical standpoint, this is a very real impression. The Hills, however, have not escaped the relentless impact of economic change that is characteristic of a dynamic economy.

The physical features of the region,

encompassing 12 counties (Figure 1), still dictate a basically noncropping production pattern. Predominantly native bluestem grass on steep rolling hills is underlain by stone that effectively resists the plow. Interspersed are relatively small tillable acreages. This is an almost ideal combination for summer grazing and wintering of ruminant-type livestock. Agriculturally, this has been and continues to be almost exclusively cattle country. It is largely within this apparent fixed environment that few agricultural changes have occurred.

The Changing Cattle Business

In earlier days, Texas and New Mexico ranchers sent big, three-year-old steers to the bluestem pastures for summer grazing. From there they went to slaughter as grass-fattened beef. Now the big steer has all but disappeared.[2] An increasingly affluent society dictated the change. With increasing average incomes, consumers demand not necessarily more beef, but more tender and leaner beef. While a substantial portion of the demand is filled with ground meat and processed meat products, the major impact has been an increased demand for the tender, flavorful, marbled cuts of "block" beef that comes from younger, grain-fed cattle.

Cattle operations in the Flint Hills have adjusted to the changed demand. It was a rather simple transition to the grazing of younger cattle that were required by the grain finishing lots. The grazing of younger cattle permitted existing pastures to support a larger number of animals. In addition, the dry grasses remaining in pastures after the summer grazing season, supplemented with proteins and vitamins, have been effectively used to winter cattle. This practice has stimulated the wintering of stocker-feeder cattle and also has led to an increase of cow herds. Thus, not only has the number of feeder calves increased, but beef-cow herds also have expanded in all counties in the Flint Hills area.

The major expansion took place during the 1950-1969 period, when the number of beef cows in the region nearly doubled. Since then, the region's beef cow numbers have experienced a relatively small decline of 6 percent.

The number of non-beef cattle and calves increased as the number of beef cows had during the 1950-1969 period, but since then their numbers have also declined. In 1986, however, every county in the region still had more beef cows and other cattle than in 1950.

Changes in cattle numbers have not been uniform. The lower tier counties, Cowley, Chautauqua, Butler, Greenwood, and Elk, continue to maintain the bulk of the Flint Hills cattle. Ranchers have been able to feed these cattle with local silage, but they have had to import feed grain from outside the region.

Flint Hills Economy

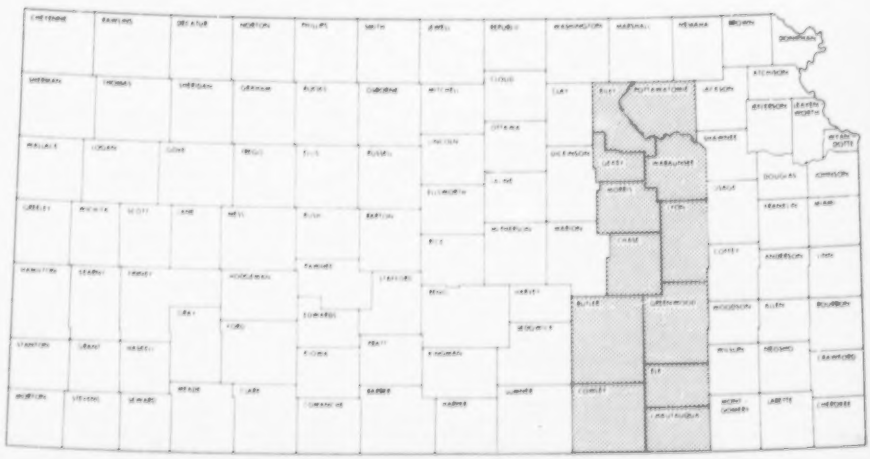
Meat packing is a necessary adjunct to cattle feeding, and few industries in the United States have been subjected to as much economic stress as the meat packing industry. The widely dispersed meat packing industry of early days was transformed into a highly concentrated industry, dominated by four firms, prior to World War II. After World War II, the trend reversed to decentralization, which is still continuing.[3] The Flint Hills region now has several meat packing plants and numerous custom slaughtering locker plants.

While the Flint Hills agricultural economy may still be dominated by beef, a number of industrial activities have been added over the years, and they flourish within the region's boundaries. The *Directory of Kansas Manufacturers and Products*[4] lists 292 businesses and manufacturing plants representing 21 different classifications of products manufactured in the region. Among them are 55 publishing and publishing-related plants, 51 food processing plants (mostly meat packing), and 33 machinery manufacturers. Metal, petroleum, and wood products are manufactured in the Flint Hills, and there are 24 firms classified as manufacturing stone, clay, glass, and concrete products. Many other miscellaneous manufacturing industries, along with agriculture, form an economic base for the region's employment and income earning opportunities.

This changing economic profile of the Flint Hills is reflected in the yearly proportion of nonfarm income as a part of the total counties' income. The nonfarm portion of income in every county has been increasing steadily since the 1950s (Table 1).

Robert A. Hoppe, in his study *Agricultural Counties: Their Location, Farms and Economies*, considers a county to be agricultural if at least 20 percent of its labor and proprietors' incomes come from farming.[5] Admittedly, the dividing line between agricultural and non-agricultural counties is arbitrary. Using Hoppe's criterion, the majority of Flint Hills counties would be classified as agricultural during the 1950-1955 and 1966-1970 periods. Wabaunsee, Morris, Elk, and Chase had about 50 percent or more of their income derived from farming. In the 1979-1983 period, none of the Flint Hills counties would be considered as agricultural, since

Figure 1
The Flint Hills Counties



more than 80 percent of the counties' incomes were obtained from nonfarming sources.

The Flint Hills region's expanding economic base offers a highly diversified manufacturing and service-oriented economy in which most residents look away from the farm for their livelihood. The number of farms and farm-related employment have been on the decline, and more and more of the farm families have become less dependent on farming for their total income.

Nationwide since 1966, the nonfarm income of the average farm family has exceeded net farm income in every year except 1973 and 1974. In 1983, nonfarm sources provided 60 percent of the average farm family's income. The percentage was higher for families on smaller farms and lower for those on larger farms. Farms with cash receipts averaging under 20 thousand dollars from the sales of their farm products doubled their farm net income from off-farm income sources.

The number of farm operators whose principal occupation is other than farming has been on the increase. In the Flint Hills counties in 1982, for example, 3,338 or 41 percent of the farm operators declared their principal occupation to be other than farming. In 1974 the comparable numbers were 2,721 or 31 percent of the region's farmers whose farming pursuit was secondary.

In this "industrial economy," the farm sector's importance and its contribution to the total economy is often overlooked, but in 1983, for example, the 12 Flint Hills counties produced nearly 410 million dollars worth of livestock and crops. This amounts to 15.4 percent of the region's total personal income.[6]

While the Flint Hills region may well experience other changes in its diversified economy, the conversion of grass into beef will continue to be the primary agricultural activity in the foreseeable future. Alternative uses for most of the land are limited because of the topography and nature of the soil. Since the late 1970s, beef may have lost its central place on the American dinner plate; nevertheless, the outlook for the Flint Hills diversified economy appears favorable.

Table 1
Nonfarm Income as a Percent of Total Income for Flint Hills Counties (five-year average)

County	1951-1955	1966-1970	1979-1983
Butler	84	88	96
Chase	52	50	82
Chautauqua	64	71	89
Cowley	87	92	97
Elk	55	64	88
Geary	88	94	98
Greenwood	72	76	92
Lyon	84	91	98
Morris	54	69	88
Pottawatomie	70	68	90
Riley	87	93	97
Wabaunsee	44	58	84

Source: U.S. Department of Commerce, *Survey of Current Business;* and State of Kansas, *Annual Economic Reports of the Governor,* selected years.

Dr. Frank Orazem
Professor of Agricultural Economics
Kansas State University

This article was contribution No. 86-390-J, Department of Agricultural Economics, Kansas State Agricultural Experiment Station, Manhattan, Kansas.

Notes

1. Rolla A. Clymer, "The Flint Hills," *Kansas,* Kansas Industrial Development Commission, May-June 1962.
2. M.W. Killmorgen and D.S. Simonett, "Grazing Operations in the Flint Hills-Bluestem Pastures of Chase County, Kansas," *Annuals of the Association of American Geographers,* 55(2):284-287 (June 1965).
3. John H. McCoy, et al., *The Competitive Position of Kansas in Marketing Beef,* Kansas Agricultural Experiment Station, Technical Bulletin 129, August 1963.
4. Kansas Department of Economic Development, *Directory of Kansas Manufacturing and Products,* selected years, Topeka, Kansas, 1983-1984.
5. U.S. Department of Agriculture, *Farmline,* 3(5), (June 1982); Robert A. Hoppe, *Agricultural Counties: Their Location, Farms and Economics,* U.S. Department of Agriculture, ESS Staff Report No. AGES 8100213 (February 1981).
6. Kansas Crop and Reporting Service, *Farm Facts,* selected years, Topeka, Kansas.

Economic Conditions

In this article we use employment data to review economic conditions in the nation's industrial sectors with a special focus on the performance of these sectors in Kansas. Recent data show that on the whole Kansas employment has been growing slightly more slowly than employment in the rest of the United States. We will also examine historic employment data for Kansas and the United States over two five-year periods, 1976-1981 and 1981-1986, to find the longer term relationship between employment in the United States and Kansas.

Recent Economic Performance

Recent manufacturing and construction employment growth have been weak in both the United States and Kansas. From March 1986 to March 1987 manufacturing grew 1.08 percent in Kansas and dropped 0.34 percent in the United States. With the March rise in new manufacturing orders, employment in this sector may soon pick up. Construction employment fell in March from February levels both in the United States and in Kansas, but if we compare Kansas construction growth to the United States over the year March 1986-1987, the picture is different. The U.S. sector has grown at 4.32 percent compared with Kansas losses of 1.25 percent.

The mining sector saw the heaviest losses over the 12-month period ending March 1987. Mining employment decreased 17.99 percent in Kansas and 13.73 percent nationally, due mainly to the huge declines in oil and gas prices over the period. Kansas was hit harder by the price drop, since we have a higher percentage of mining sector employment in the oil and gas subsector than the United States has.

The year March 1986 to March 1987 has seen big employment gains in the service and trade sectors. Employment in service industries grew a strong 2.99 percent in Kansas and an even stronger 4.95 percent in the United States as a whole. Nationwide, most of the activity was in the business services and health services subsectors. Trade was up 1.99 percent in Kansas compared with 2.63 percent in the United States. The bulk of the Kansas activity was in the eating and drinking, food, and miscellaneous retail stores subsectors.

Strong employment growth in service and trade sectors has been the mainstay of personal income over the past year. But as the economic structure shifts employment from the traditionally high paying manufacturing jobs to generally lower paying service and trade jobs, we are likely to face declines in the personal income growth rate. Between the third and fourth quarters of 1987, Kansas personal income grew 2.47 percent compared with U.S. growth of only 0.83 percent. However, annual data show personal income rose more slowly in Kansas than in the United States, 4.5 percent versus 5.17 percent, between 1985 and 1986.

In this recent period Kansas sectors seem to be performing a little behind the nation. We can get a better picture of Kansas's strengths and weaknesses relative to the nation by looking further back. We will examine Kansas employment growth compared with national employment growth over two five-year periods: 1976 to 1981 and 1981 to 1986.

Long-Term Economic Performance

United States total nonagriculture employment grew 9.9 percent from 1981 to 1986. This represents a slowdown from the previous five-year period, 1976-1981, over which total employment grew 14.8 percent. Compared with U.S. employment growth, Kansas nonagriculture employment growth over these periods was weaker: 13.76 percent from 1976 to 1981, and 4.12 percent from 1981 to 1986. During the past five years, employment in the United States increased at more than twice the Kansas rate. We will use a technique called shift-share analysis to help us determine the reasons for this disparity.[1] The question we hope to answer is this: Does the Kansas economy have a disproportionately large share of slow-growing industries relative to the nation (in terms of employment), or is the Kansas economy a slow-growing microcosm of the national economy?

The Shift-Share Analysis

A shift-share analysis is a method of neatly measuring a region's economic performance relative to the nation's over a specific time period. This relative change has two components: differential shift and proportional shift. Differential shift measures the rate of employment growth in the region's economic sectors compared with the same sectors' employment growth rates in the United States as a whole. For example, in 1981 employment in the retail sector was 162,760 in Kansas and 15,189,200 in the United States. By 1986 Kansas employment in this sector had grown 12.3 percent to 182,810, while U.S. employment reached 17,974,000, an 18.3 percent increase. We now multiply the U.S. growth rate for the period by the Kansas 1981 employment level and find that Kansas retail employment would have been 192,600 had it grown at the same rate as retail employment nationally. Subtracting Kansas 1986 retail employment as projected by U.S. growth rates from the actual 1986 employment, we get the differential shift in this one sector, −9,790. The same procedure is followed for each sector. The method can be written algebraically:

Differential shift =

$$KS_{2i} - [(US_{2i} - US_{1i})/US_{1i}] \cdot KS_{1i} + KS_{1i}$$

where

KS_{1i} = Kansas employment in sector i in time period one

KS_{2i} = Kansas employment in sector i in time period two

US_{1i} = U.S. employment in sector i in time period one
US_{2i} = U.S. employment in sector i in time period two

The sum of the sectors' differential shifts is the total differential shift.

The proportional shift describes the influence of the region's industrial mix on regional employment growth. Proportional shift cannot be measured directly but can be found by subtracting the total differential shift from the total shift. To find the total shift, we follow the same formula set out above for finding the differential shift in a single sector, except we substitute total employment for employment in a particular sector. The proportional shift gives some indication whether the Kansas economic structure has a higher or lower proportion of the more rapidly growing sectors than the United States. If the proportional shift is negative, then, relative to the United States, a disproportionate share of Kansas employment is in the slower growth industries.

Two things should be kept in mind when interpreting the proportional shift. First, a bias exists which depends on the amount of disaggregation. The more disaggregated the model, the larger the proportional shift. Second, the proportional shift reflects the industrial mix of the base year (1976 or 1981), but the mix changes over the period of study. The proportional shift may give us information about the past industry mix but not about the current mix.

Table 1
Difference Between 1986 Kansas Employment and 1981 Projections Based on U.S. Growth Rates

Sector	Number of Jobs*
Mining	– 1,107
Oil and Gas	– 960
Construction	– 7,688
Transportation Equipment	– 7,190
Other Durable Goods	– 4,616
Petroleum & Coal Products	– 942
Other Non-Durable Goods	5,004
Transportation & Utilities	719
Wholesale Sales	– 5,950
Retail Sales	– 9,790
Finance	– 2,835
Services	– 20,633
Federal Government	1,875
State & Local Government	1,735
Total	– 54,605

*A negative number indicates that actual employment was less than projected employment.

Differential Shift Analysis

Employment growth in Kansas sectors relative to the nation's was mixed in the 1976 to 1981 period. From 1981 to 1986 however, employment in nearly all Kansas sectors grew more slowly than in their U.S. counterparts. Table 1 sets out the differential shifts for employment in the Kansas industrial sectors and the total differential shift for Kansas industrial employment. The performance of several sectors in particular stands out.

Oil and Gas Extraction

Employment in the oil and gas extraction sector in Kansas grew dramatically between 1976 and 1981 and fell dramatically between 1981 and 1986. In the first of the time periods, Kansas employment grew below the national average for the sector, and in the second period it fell more than the national average. The history of Kansas oil production explains these differences in employment growth rates.

From 1957 through 1978 both production and proved reserves of Kansas oil were declining while U.S. production was increasing. Wells that could be profitably operated at the existing prices were being exhausted. Between 1976 and 1981 crude petroleum prices increased 216.8 percent, and it became profitable to produce from wells that were near exhaustion. In 1982, more than 60 percent of Kansas oil production was from stripper wells, a relatively expensive method of oil recovery. While production was increasing new reserves were being developed at the same rate. Known reserves did not decline between 1977 and 1982.

Kansas oil can be characterized as "marginal" compared with other oil reserves in the nation. At market prices from 1957 through 1978 it was barely profitable to extract Kansas oil. An extreme price increase was necessary for much Kansas production to be profitable. From 1981 to 1986, crude petroleum prices fell 56.5 percent, many Kansas wells could no longer make a profit, and Kansas suffered greater employment losses than the nation in this sector. This marginal characteristic of Kansas oil also prevented the state's oil and gas extraction sector from enjoying employment growth equal to the nation's from 1976 to 1981. That is not to say the sector did poorly; employment grew by 95.6 percent from 1976 to 1981.

Petroleum Refining

Employment in Kansas's petroleum and coal products sector (most of which is petroleum refining) grew more rapidly than the sector did nationally from 1976 to 1981. From 1981 to 1986, however, it lost much more employment. Employment changes in this sector have been closely related to price changes and the technology of Kansas refineries.

Between 1976 and 1981 Kansas was in the business of refining other states' crude petroleum. In 1977 refined petroleum was Kansas's most important export commodity, although Kansas crude oil production and proved reserves had been decreasing for more than 20 years. Meanwhile, the nation's crude oil

production had been increasing. Because of extensive importing to Kansas of crude petroleum between 1976 and 1981, Kansas showed a greater petroleum refining employment growth rate than the nation.

Kansas's advantage in this sector was lost between 1981 and 1986. Kansas refineries became out-dated, and the new refineries were built elsewhere near more important oil supplies. Huge price increases for crude petroleum had made new, more efficient technologies important. Between 1977 and 1984, Kansas lost 30 percent of its capacity in petroleum refining when the state lost four of its 11 refineries.

Construction

While the nation's construction industry employment grew by 17.2 percent from 1976 to 1981 and 18.2 percent from 1981 to 1986, Kansas construction employment levels were nearly unchanged in 1981 from 1976 and again in 1986 from 1981. In 1976, Kansas construction employed 42,550, in 1981 it employed 42,710, and in 1986 it employed 42,810. Had Kansas construction employment grown between 1976 and 1986 at the national rate, there would have been 16 thousand more employees in 1986 than there actually were.

To understand why Kansas construction employment did not grow at the national rate, we need to look at the reasons construction work is undertaken. Three major reasons are

1) to replace and maintain houses, offices, and factories;

2) to expand industrial and business capacity by building new structures; and

3) to build new structures for a growing population.

In the United States, maintenance and repair construction accounted for just 27.9 percent of total construction output in 1977. The remaining 72.1 percent of the sector's output was due to new construction. Almost 80 percent of new construction was for expanding industrial capacity.

U.S. employment in construction has grown more rapidly than Kansas construction employment, especially so from 1981 to 1986. Construction employment growth was probably slower in Kansas because industries were not expanding capacity. Low rates of total Kansas employment growth indicate low rates of industrial expansion in the state and little need for increased capacity.

Construction activity can be expected if a region's population is increasing. A growing population requires more homes and public facilities. Kansas population has grown more slowly than the nation's throughout the 1970s and 1980s, which further explains lower demand for construction in Kansas than in the United States.

Kansas's construction sector has maintained its employment level from 1976 through 1986, perhaps due in part to maintenance, repair, and replacement of existing structures—construction that is less dependent on industrial expansion.

Transportation Equipment

Employment grew more rapidly in the transportation equipment sector in Kansas than in the nation from 1976 to 1981 and more slowly from 1981 to 1986. The difference in rates is largely due to the ups and downs of the Kansas aircraft industry. In Kansas, aircraft manufacturing dominates the transportation equipment sector. This is not true for the United States as a whole, where automobile manufacturing makes up the major portion of transportation equipment. In 1976, 85.8 percent of Kansas's transportation equipment employment was in aircraft; in 1981 aircraft accounted for 74.5 percent of transportation equipment employment.

From 1976 to 1981 Kansas transportation equipment employment grew 23.6 percent compared with the national rate of 5.8 percent. The auto industry was suffering during these years. In 1976, 8.5 million domestic passenger cars were sold, while in 1981, 6.2 million were sold, a 26.9 percent decrease in sales. At the same time, however, aircraft sales were increasing dramatically. From 1976 to 1981, sales of aircraft to non-government buyers increased 100.5 percent. This increase in demand allowed the Kansas aircraft sector to expand its employment.

Between 1981 and 1986 the situation reversed. Nationally, auto sales began increasing while aircraft sales decreased. During this period, Wichita's aircraft manufacturers lost 16.4 percent of their employment. Boeing Military Aircraft Corporation increased its employment from 15,700 in 1981 to 20,800 in 1986 (a 32.5 percent increase) as defense spending increased. But non-Boeing employment fell dramatically from 21,500 to 10,300 during the same period (a 52.1 percent decrease). Boeing's increased employment was not enough to offset other manufacturers' decreases.

Non-Durables

Kansas enjoyed much better employment growth in the non-durables sector (which excludes petroleum and coal products) than did the nation from 1976 to 1981 and 1981 to 1986. In 1986, Kansas non-durables employed ten thousand more people than it would have had it followed the national employment growth rate for 1976 through 1986.

Between 1976 and 1981 Kansas non-durables employment growth was due primarily to growth in three sub-sectors: paper and allied products, printing and publishing, and chemicals and allied products. These three industries employed 5,600 more people in 1981 than in 1976.

While non-durable employment fell by 2.2 percent in the nation between 1981 and 1986, it grew by 5.7 percent in Kansas. This expansion can be attributed to continued growth in both the paper and allied products sector and the printing and publishing sector, and to the development of the meat packing industry. Meat packing grew by approximately four thousand employees between 1981 and 1985.[2]

Finance, Insurance, and Real Estate

Nationally, finance, insurance, and real estate employment grew tremendously from 1976 to 1981 and 1981 to 1986. In Kansas the sector grew, but at a slower rate than the nation.

Between 1976 and 1986 Kansas total employment and population grew at rates slightly below the national rates. Demand for finance, insurance, and real estate services are certainly dependent to some extent on population and industrial and business expansion. Kansas's lower total growth rates may explain why the sector experienced less employment growth than the nation.

Although Kansas employment in this sector grew at a rate that was below the nation's, there was considerable employment growth. Finance, insurance, and real estate employed 13,800 more people in 1986 than in 1976. This growth can largely be attributed to a structural change in the national economy: Finance, insurance, real estate and other services have been demanded in greater quantities by business, industry, and individuals in recent years.

Banking and credit agencies accounted for approximately 40 percent of the total employment in finance, insurance, and real estate. The fortunes of the banking sector help explain the relatively low employment growth rate in Kansas in 1981 through 1986 compared with 1976 through 1981. As overall economic conditions in the state worsened, particularly in the agriculture sector, banks and credit agencies suffered. Consequently, employment in banking remained relatively steady from 1981 to 1986, while other sectors within finance, insurance, and real estate expanded their employment.

Services

Employment in the service sector in Kansas grew in a pattern very similar to Kansas's finance, insurance, and real estate sector, which is not surprising as they are very similar. Between 1976 and 1981, employment grew 22 percent—dramatic growth, but lower than the national rate. Between 1981 and 1986 employment growth slowed to 12 percent, also below the national average. Between 1976 and 1981, the service sector became the largest employer in the state, passing retail trade, although Kansas retail trade employment grew strongly, by 9.7 percent from 1976 to 1981 and 12.3 percent from 1981 to 1986. Again, the growth of the service sector's employment is a reflection of a structural change in the national economy.

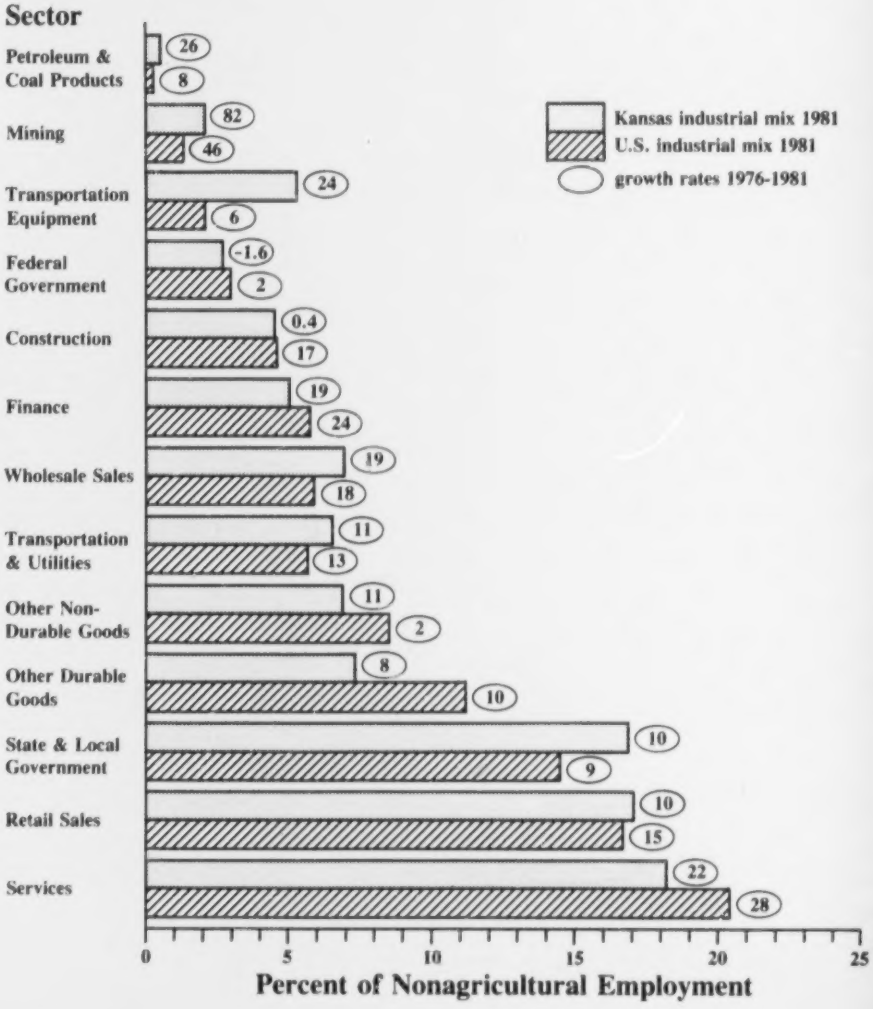
The two largest employers within the service sector are business services and health services. Together these sectors accounted for 50 percent of all service employees in Kansas in 1976. In 1976 to 1981 health services employment grew 29.1 percent, in 1981 to 1986 growth slowed to approximately 0.2 percent. Business services employment grew relatively slowly in 1976 to 1981 when compared with 1981 to 1986. In the first period employment grew 29.9 percent and in 1981 to 1986 it grew approximately 51.5 percent.[3]

The Proportional Shift

The proportional shift analysis shows that Kansas's industrial mix accounted for about 11 percent of the difference between U.S. and Kansas total nonagriculture employment growth between 1981 and 1986. During the previous five-year period, Kansas's industrial mix was a positive, offsetting factor, compensating for 18 percent of the difference between employment growth in Kansas sectors and employment growth in the same sectors nationally.

The total shift in Kansas employment relative to the United States from 1976 to 1981 was −8,990 jobs. The total differential shift was −10,990 jobs, which means the proportional shift was positive two thousand jobs. This positive proportional shift indicates that some relatively high growth sectors constituted a larger share of the Kansas economy than the national economy. For instance, the mining sector saw universally high rates of employment growth between 1976 and 1981, and mining's share of total nonagriculture employment was one-third larger in Kansas than in the United States. Two large sectors in Kansas, retail trade and state and local government, were also growth sectors and made up a larger

Figure 1
Industrial Mix, 1981
and Growth Rates of Sectors, 1976-1981



share of the economy in Kansas than in the United States. Transportation and utilities and wholesale trade were also fast-growing sectors, making up a larger share of Kansas than of the United States.

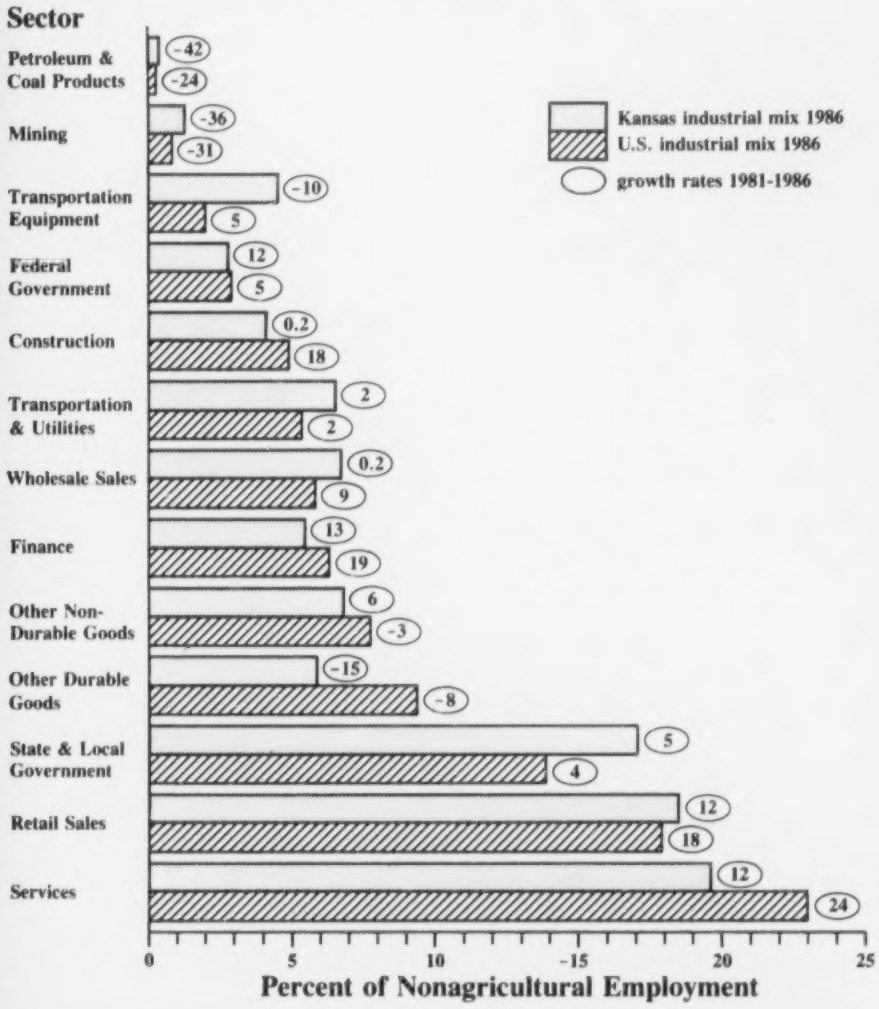
From 1981 to 1986 the total shift in Kansas employment was a dismal −54,600 jobs. The total differential shift accounted for −48,740 jobs so proportional shift was then −5,860 jobs. Again, Kansas total employment grew more slowly than total U.S. employment. This was mainly because of the relatively slower employment growth in Kansas's industrial sectors; however, underrepresentation in some of the high-growth sectors, like FIRE and Services, played a minor role in the jobs deficit. It is true that all the industries that represented a larger share of the Kansas economy than of the United States economy in 1976 still did so in 1981. But these could all be considered high-growth industries in 1976, and between 1981 and 1986, none, with the exception of retail, were growing very quickly. Mining, for example, grew 82 percent in Kansas in 1976-1978, but between 1981 and 1986 it had the worst growth rate of all sectors: −36 percent in Kansas and −31 percent nationwide.

As we said earlier, one should take care in interpreting the proportional shift as it is only an indication of the economic structure during the base year, and reflects nothing of the current structure, much less give us any hint about the future. We do know what the 1986 Kansas structure looks like. Kansas is getting more and more underrepresented in the high-growth industries of FIRE and Services, as the U.S. growth rate continues to outpace the Kansas rate. The United States might soon match the Kansas concentration in retail since the United States retail employment growth has also been higher than in Kansas.

Figures 1 and 2 show the relationship between growth rates and industrial mix in Kansas and in the nation.

The shift-share analysis is useful in getting at the reasons for disparities in regional and national total employment growth. The year 1981 to 1986 saw Kansas total nonagriculture employment grow at less than half the U.S. rate, mainly because of anemic growth in Kansas sectors' employment compared to the United States. An underrepresentation of high-growth industries and overrepresentation of low-growth industries also made a minor contribution to the total Kansas/United States employment growth disparity. The 1986 Kansas and United States economic structure shows Kansas underrepresentation in high-growth industries more pronounced as fast-paced U.S. growth sectors outdistance their Kansas counterparts.

Figure 2
Industrial Mix, 1986
and Growth Rates of Sectors, 1981-1986



Shirley Sicilian
Research Associate
and Mike Eglinski
Research Assistant
Institute for Public Policy
and Business Research

Notes

[1] For Kansas shift-share analyses for other periods, see "Long-Term Structural Changes in the Kansas-Economy," by Anthony Redwood, Daniel L. Petree, and Gary R. Albrecht in the Winter 1984-1985 *Kansas Business Review*; and "The Kansas Economy," by Robert Glass in the Fall 1984 *Kansas Business Review*.

[2] 1986 employment figures for this level of detail have not been published.

[3] The rates for business services and health services are based on growth from 1981 to 1985, because sufficiently detailed 1986 figures have not yet been published.

Papers from the 1987 Annual Midwest Symposium on Public Policy

"Community Impacts of Deregulation"

Research papers and responses from industry practitioners presented at the "Community Impacts of Deregulation" symposium are available to interested persons. The symposium, held April 22-23, 1987, examined the effects on communities of deregulation in the transportation, banking, telecommunication and electric utilities industries. The papers were written by scholars from major midwestern universities, and responses to the papers were prepared by practitioners from organizations such as Union Pacific and Santa Fe Railroads, the Farm Foundation, the Kansas Bankers Association, the Federal Reserve Bank of Kansas City, Southwestern Bell Telephone, the Missouri Public Service Commission, and the Kansas Corporation Commission. To receive a listing of the available papers and comments, contact Loretta Carraher, Institute for Public Policy and Business Research, University of Kansas, Lawrence, Kansas 66045, (913) 864-3123.

Institute Monographs Available

No. 100 *The Kansas Retail Liquor Industry,* Darwin W. Daicoff (1985)

No. 101 *Kansas Commission for the Humanities: Needs Assessment,* Steven Maynard-Moody (1985)

No. 102 *An Estimate of the Cost of Alzheimer's Disease in Kansas,* Catherine Shenoy (1985)

No. 103 *Kansas Economic Development Study-Interim Report,* Anthony Redwood and Charles Krider (1985)

No. 104 *The Economic Impact of State Support for the Arts in Kansas,* Shirley Sicilian and Robert Glass (1986)

No. 105 *Second Annual Public Opinion Survey of Kansas,* Steven Maynard-Moody and Jerry Mitchell (1986)

No. 106 *Information Utilization in Kansas Government,* Steven Maynard-Moody and Jerry Mitchell (1986)

No. 107 *Economic Impact of Santa Fe Industrial Park,* Catherine Shenoy (1985)

No. 108 *Kansas Economic Development Final Report* (only Executive Summary available), Anthony Redwood and Charles Krider (1986)

No. 109 *Rights Without Resources: The Rise and Fall of the Kansas Kickapoo,* Donald Stull, Jerry Schultz and Ken Cadue (1986)

No. 110 *An Introduction to the Study of Indochinese Refugee Policy Concerns,* John Massad and Donald Stull (1986)

No. 111 *Estimate of Need and Utilization of Home Health Service in Kansas,* Catherine Shenoy (1986)

No. 112 *Kansas Housing Survey,* Steven Maynard-Moody and Jerry Mitchell (1986)

No. 113 *High Technology Businesses in Lawrence, Kansas,* Catherine Shenoy (1986)

No. 114 *Proceedings, First Black Leadership Symposium,* Jacob Gordon (1986)

No. 115 *Kansas Local Government: A Report to the Governor,* Steven Maynard Moody (1986)

No. 116 *The Regulatory Review Process and Business Impact Analysis,* Katherine Bryant (1987)

No. 117 *Costs and Benefits of Business Tax Incentives in Kansas,* Shirley Sicilian (1987)

No. 118 *Some Economic Variables and the Expansion of Retail Facilities,* Catherine Shenoy (1987)

No. 119 *Third Annual Public Opinion Survey of Kansas,* Steven Maynard-Moody and Jerry Mitchell (1987)

No. 120 *Higher Education—Private Sector Linkages for Economic Development—Executive Summary,* Anthony Redwood, Kathleen Harnish and Carolyn Coleman (1986)

No. 121 *Final Report for the Wichita Comprehensive Program to Reduce Driving While Intoxicated,* Steven Maynard-Moody (1986)

No. 122 *Kansas Higher Education Enrollment Package Conversion From GCOS to VM/CMS,* Larry Hoyle (1987)

No. 123 *The Economic Impact of Cheyenne Bottoms on Kansas and on Barton County,* Shirley Sicilian and Carolyn Coleman (1986)

No. 124 *Final Report: Research Improvement Award for Economic Development,* Anthony Redwood, Mohamed El Hodiri, and David Burress (1987)

These monographs are available at $3.00 per copy. Orders should be directed to Judy Schrick, IPPBR, 607 Blake Hall, University of Kansas, Lawrence, Kansas 66045, (913) 864-3701.

Economic Indicators

TABLE ONE: ECONOMIC INDICATORS

Comparison Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Quarterly,at annual rates, SA						
Kansas - Mil. $	4TH	36065	35195	34478	2.47	4.60
United States - Bil.$	1ST	3586.27	3527.93	3432.60	1.65	4.48
B. Employment - Quarterly						
Kansas - Thou., NSA	1ST	1160.70	1168.03	1122.73	-0.63	3.38
United States - Mil., SA	1ST	111.27	110.40	108.77	0.79	2.30
C. Unemployment Rate - Quarterly						
Kansas - % NSA	1ST	5.9	5.5	4.1		
United States - % SA	1ST	6.7	6.8	7.1		
D. Retail Sales - Monthly, at annual rates						
Kansas - Mil. $, NSA	MAR	2023.33	1150.00	1290.00	75.94	56.85
United States - Bil. $, SA	MAR	125.20	124.30	117.30	0.72	6.73
E. Consumer Price Index, CPI-U, All items - Monthly, SA						
Kansas City* - 1967 = 100	DEC	324.70	323.70	321.80	0.31	0.90
United States - 1967 = 100	MAR	336.40	335.00	326.50	0.42	3.03
Kansas Indicators						
F. New Incorporations - Quarterly, NSA						
For Profit - Number	1ST	371.33	394.67	368.67	-5.91	0.72
G. Tax Revenue, Quarterly, NSA						
General Fund Tax Revenue - Mil. $	1ST	141.90	148.73	125.80	-4.59	12.80
H. Operating Expenditures, Quarterly, NSA						
General Fund Operating Expenditures - Mil. $	1ST	142.17	152.67	118.03	-6.88	20.45

NOTES: *The Kansas City CPI-U is published biannually.
National employment and unemployment rate figures are based on the Current Population Survey (household survey).
State figures are based on the Current Employment Statistics Survey (establishment survey).
NSA-Not Seasonally Adjusted.
SA-Seasonally Adjusted.

SOURCE: BEA, BLS, Ks. Dept. of Human Resources, Ks. Secretary of State, Ks. Dept. of Administration, Ks. Dept of Revenue.

TABLE TWO: NATIONAL INDICATORS
(Seasonally Adjusted)

General Indicators		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Income Measures - Quarterly, at annual rates						
Gross National Product - Bil. 82$	1ST	3735.90	3696.10	3655.90	1.08	2.19
Disposable Personal Income - Bil. 82$	1ST	2612.07	2595.43	2581.23	0.64	1.19
Personal Consumption - Bil. 82$	1ST	2438.90	2445.80	2372.70	-0.28	2.79
Gross Private Investment - Bil. 82$	1ST	678.50	629.00	684.00	7.87	-0.80
Net Export of Goods and Services - Bil. 82$	1ST	-137.20	-148.00	-125.90		
Government Purchases - Bil. 82$	1ST	755.20	769.30	725.20	-1.83	4.14
Savings Rate - %	1ST	2.80	2.60	4.97		
B. Labor Force - Monthly						
Civilian Labor Force - Mil.	MAR	119.20	119.30	117.20	-0.08	1.71
Employed - Mil.	MAR	111.40	111.40	108.80	0.00	2.39
Unemployed - Mil.	MAR	78.50	79.70	83.80	-1.51	-6.32
Unemployment Rates - percent						
All -	MAR	6.60	6.70	7.20		
Women -	MAR	6.60	6.70	7.30		
Men -	MAR	6.60	6.70	7.00		
Teens -	MAR	18.10	18.00	18.40		
Blacks and other than white -	MAR	12.50	12.80	13.40		
Whites -	MAR	5.60	5.70	6.20		
C. General Business - Quarterly						
Industrial Production - 1977 = 100	1ST	126.80	126.00	125.03	0.63	1.41
Mfg. and Trade Sales - Bil. 82$	1ST	433.87	432.37	415.50	0.35	4.42
Mfg. and Trade Inventories - Bil. 82$	1ST	647.70	643.14	642.65	0.71	0.79
New Orders, Durable Goods - Bil. 82$	1ST	92.87	94.52	93.92	-1.75	-1.12
Capacity Utilization, Mfg. %	1ST	80.10	79.80	80.00		
New Housing Starts, Private - Tho.	1ST	1801.00	1702.33	1938.00	5.80	-7.07
D. Prices - Monthly						
Consumer Prices - 1967 = 100						
CPI-U, All Items	MAR	336.40	335.00	326.50	0.42	3.03
Food	MAR	329.20	329.60	314.40	-0.12	4.71
Housing	MAR	367.20	365.80	358.00	0.38	2.57
Apparel	MAR	215.40	211.80	206.40	1.70	4.36
Transportation	MAR	311.80	309.80	311.60	0.65	0.06
Medical	MAR	453.70	451.70	424.60	0.44	6.85
Producer Prices - 1967 = 100 (NSA)						
All Commodities	MAR	302.80	302.70	300.30	0.03	0.83
Industrial Commodities	MAR	315.80	315.70	314.00	0.03	0.57
Crude Materials	MAR	287.70	288.80	281.10	-0.38	2.35
Capital Equipment	MAR	310.30	310.50	304.30	-0.06	1.97
Agricultural Prices - 1977 = 100						
Prices Received	MAR	123.00	122.00	122.00	0.82	0.82
Prices Paid	MAR	159.00	159.00	163.00	0.00	-2.45
E. Monetary and Credit Aggregates - Quarterly						
(Annual rates of change, seasonally adjusted in percent.)						
Total Reserves -	1ST	18.60	21.50	13.10		
M1	1ST	13.00	17.00	8.80		
Commercial Banks:						
Savings -	1ST	37.00	36.90	1.90		
Small Denomination Time -	1ST	-4.90	-10.70	3.90		
Large Denomination Time -	1ST	9.50	0.40	16.00		
Thrift Institutions:						
Savings -	1ST	27.90	23.00	5.90		
Large Denomination Time -	1ST	-10.00	-7.30	6.60		
Debt Components:						
Federal -	1ST	10.20	12.10	17.00		
Nonfederal -	1ST	12.80	12.10	15.00		
Interest Rates - Monthly						
Prime Rate - %	MAR	7.50	7.50	9.10		
Discount Rate - %	MAR	5.50	5.50	7.10		

SOURCES: BEA, BLS, Survey of Current Business, Federal Reserve Bulletin.

TABLE THREE: EMPLOYMENT IN KANSAS

Category		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. General Indicators - Quarterly						
Civilian Labor Force - Tho.	1ST	1233.80	1235.67	1198.13	-0.15	2.98
Employed - Tho.	1ST	1160.70	1168.03	1122.73	-0.63	3.38
Farm Employment - Tho.	1ST	50.97	56.33	52.13	-9.53	-2.24
Unemployed Tho.	1ST	73.10	67.67	75.40	8.03	-3.05
Initial Claims for Unemployment Insurance - Tho.	1ST	16.23	16.86	16.42	-3.75	-1.16
Average Work Week, Mfg. - Hrs.	1ST	40.77	40.50	39.97	0.66	2.00
B. Industry Employment - Quarterly, in thousands						
All Industries -	1ST	979.93	1005.00	969.00	-2.49	1.13
Manufacturing -	1ST	174.53	173.20	174.13	0.77	0.23
Durable Goods -	1ST	103.23	103.67	102.93	-0.42	0.29
Fabricated Metal Production -	1ST	11.10	11.60	11.43	-4.31	-2.92
Machinery (incl. Elec.) -	1ST	23.63	25.40	26.80	-6.96	-11.82
Transport. Equip. -	1ST	46.63	45.93	44.30	1.52	5.27
Nondurable Goods -	1ST	71.30	69.53	71.20	2.54	0.14
Food and Kindred Prod. -	1ST	27.63	26.47	26.17	4.41	5.61
Meat Products -	1ST	14.10	12.87	12.90	9.59	9.30
Printing and Publishing -	1ST	18.33	17.23	18.13	6.38	1.10
Petroleum and Coal -	1ST	2.90	2.90	2.90	0.00	0.00
Mining -	1ST	11.40	11.77	15.07	-3.12	-24.34
Oil and Gas Extraction -	1ST	10.00	10.20	13.60	-1.96	-26.47
Contract Construction -	1ST	38.50	43.57	36.13	-11.63	6.55
Trans. and Public Utilities -	1ST	61.80	64.77	63.70	-4.58	-2.98
Wholesale Trade -	1ST	65.20	65.70	65.50	-0.76	-0.46
Retail Trade -	1ST	180.53	189.80	175.03	-4.88	3.14
Finance, Ins., and Real Estate -	1ST	54.50	54.73	53.93	-0.43	1.05
Services	1ST	195.17	197.40	188.10	-1.13	3.76
Federal Government -	1ST	27.80	28.13	27.80	-1.18	0.00
State and Local Government -	1ST	170.50	175.93	169.67	-3.09	0.49

SOURCES: BLS, Ks. Dept. of Human Resources.

TABLE FOUR: KANSAS RETAIL SALES SUBJECT TO SALES TAX
(At Annual Rates)

Account		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Business Classification - Quarterly, in Millions						
Apparel -	1ST	57.47	50.69	42.65	13.38	34.74
Automotive -	1ST	291.54	350.23	228.12	-16.76	27.80
Food -	1ST	438.64	438.75	324.57	-0.02	35.15
Furniture -	1ST	101.58	95.32	76.85	6.57	32.18
General Merchandise -	1ST	318.82	298.83	249.31	6.69	27.88
Lumber and Building Materials -	1ST	124.10	142.81	89.07	-13.10	39.34
Prof. and Pers. Service -	1ST	97.36	99.07	72.48	-1.73	34.32
Public Utilities -	1ST	105.79	82.18	75.12	28.74	40.84
Unclassified -	1ST	167.92	159.94	125.17	4.99	34.15
Farm and Garden Products -	1ST	1.93	1.71	1.36	13.13	41.81
Manufacturing and Trading -	1ST	99.72	106.59	84.51	-6.44	18.01
Miscellaneous -	1ST	5.49	5.76	5.47	-4.69	0.37
Total -	1ST	1809.97	1824.16	1375.60	-0.78	31.58

NOTE: Retail sales figures are based on sales tax collections. Actual and reported retail sales may vary.

SOURCES: Ks. Dept. of Revenue.

TABLE FIVE: INCOME IN KANSAS
(Seasonally Adjusted, at Annual Rates)

Account		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Personal Income - Quarterly						
Total - Mil. $	4TH	36065	35195	34478	2.47	4.60
Nonfarm Income - Mil. $	4TH	33932	33987	33107	-0.16	2.49
Farm Income - Mil. $	4TH	2134	1208	1371	76.66	55.65
Average Weekly Earnings, Mfg.* - $		409.86	401.91	383.42	1.98	6.90
B. Earnings by Industry - Quarterly, in Millions						
Nonfarm -	4TH	23811	23660	22758	0.64	4.63
Farm -	4TH	2134	1208	1371	76.66	55.65
Manufacturing -	4TH	4917	4811	4607	2.20	6.73
Durable Goods -	4TH	3184	3021	2889	5.40	10.21
Nondurable Goods -	4TH	1733	1790	1718	-3.18	0.87
Mining -	4TH	326	313	469	4.15	-30.49
Contract Construction -	4TH	1540	1620	1428	-4.94	7.84
Trans. and Public Utilities -	4TH	2178	2149	2124	1.35	2.54
Wholesale Trade -	4TH	1768	1762	1728	0.34	2.31
Retail Trade -	4TH	2386	2357	2318	1.23	2.93
Finance, Ins., and Real Estate -	4TH	1543	1508	1354	2.32	13.96
Services -	4TH	4842	4760	4509	1.72	7.39
Federal Government -	4TH	722	720	693	0.28	4.18
State and Local Government -	4TH	2872	2931	2805	-2.01	2.39

NOTE: *Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SIX: KANSAS AGRICULTURAL INDICATORS

Item		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Prices Received - Monthly						
All Farm Products - 1977 = 100	MAR	143	140	141	2.14	1.42
All Crops - 1977 = 100	MAR	99	97	125	2.06	-20.80
Wheat - $/Bu.	MAR	2.45	2.40	2.93	2.08	-16.38
Sorghum Grain - $/Cwt.	MAR	2.36	2.24	3.52	5.36	-32.95
Corn - $/Bu.	MAR	1.59	1.51	2.43	5.30	-34.57
Soybeans - $/Bu.	MAR	4.58	4.52	5.04	1.33	-9.13
All Hay - $/Ton	MAR	49.00	52.00	44.00	-5.77	11.36
Livestock and Products - 1977 = 100	MAR	170	167	150	1.80	13.33
All Beef Cattle - $/Cwt.	MAR	63.30	62.00	56.00	2.10	13.04
Steers and Heifers - $/Cwt.	MAR	64.10	63.00	57.00	1.75	12.46
Calves - $/Cwt.	MAR	73.20	72.00	64.10	1.67	14.20
Hogs - $/Cwt.	MAR	46.70	47.40	40.20	-1.48	16.17
Milk - $/Cwt.	MAR	13.10	13.40	12.50	-2.24	4.80

SOURCE: Ks. Crop and Livestock Reporting Service.

NOTE: *Not seasonally adjusted.

SOURCES: BEA, Ks. Dept. of Human Resources.

TABLE SEVEN: EMPLOYMENT AND SALES FOR SMSAs AND COUNTIES

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Wichita SMSA - Quarterly						
Civilian Labor Force - Tho.	1ST	227.43	225.07	219.70	1.05	3.52
Employed - Tho.	1ST	213.20	211.37	205.73	0.87	3.63
Unemployed - Tho.	1ST	14.20	13.67	13.97	3.90	1.67
Rate - %	1ST	6.27	6.07	6.37		
Retail Sales - Mil. $	1ST	354.35	366.59	274.39	-3.34	29.14
B. Kansas Portion of Kansas City SMSA - Quarterly						
Civilian Labor Force - Tho.	1ST	301.53	302.23	290.37	-0.23	3.85
Employed - Tho.	1ST	286.33	289.63	276.07	-1.14	3.72
Unemployed - Tho.	1ST	15.23	12.60	14.30	20.90	6.53
Rate - %	1ST	5.07	4.20	4.93		
Retail Sales - Mil. $	1ST	430.73	440.40	296.91	-2.20	45.07
C. Topeka SMSA - Quarterly						
Civilian Labor Force - Tho.	1ST	88.67	86.77	84.40	2.19	5.06
Employed - Tho.	1ST	83.93	82.37	79.33	1.90	5.80
Unemployed - Tho.	1ST	4.73	4.40	5.07	7.58	-6.58
Rate - %	1ST	5.33	5.03	6.00		
Retail Sales - Mil. $	1ST	127.18	133.66	97.98	-4.84	29.80
D. Lawrence SMSA - Quarterly						
Civilian Labor Force - Tho.	1ST	38.63	39.13	36.37	-1.28	6.23
Employed - Tho.	1ST	37.00	37.77	34.80	-2.03	6.32
Unemployed - Tho.	1ST	1.63	1.33	1.57	22.50	4.26
Rate - %	1ST	4.23	3.47	4.30		
Retail Sales - Mil. $	1ST	46.33	48.01	33.49	-3.50	38.34
E. Riley County--Manhattan Area - Quarterly						
Civilian Labor Force - Tho.	1ST	27.13	27.53	26.60	-1.45	2.01
Employed - Tho.	1ST	26.10	26.60	25.53	-1.88	2.22
Unemployed - Tho.	1ST	1.07	0.97	1.03	10.34	3.23
Rate - %	1ST	3.90	3.50	3.93		
Retail Sales - Mil. $	1ST	23.04	23.32	17.75	-1.20	29.81
F. Reno County--Hutchinson Area - Quarterly						
Civilian Labor Force - Tho.	1ST	31.60	31.90	31.87	-0.94	-0.84
Employed - Tho.	1ST	29.23	29.00	28.90	0.80	1.15
Unemployed - Tho.	1ST	2.40	2.87	2.93	-16.28	-18.18
Rate - %	1ST	7.63	9.03	9.20		
Retail Sales - Mil. $	1ST	42.73	46.49	35.43	-8.09	20.61
G. Crawford County--Pittsburg Area - Quarterly						
Civilian Labor Force - Tho.	1ST	16.87	16.87	16.47	0.00	2.43
Employed - Tho.	1ST	15.63	15.77	15.10	-0.85	3.53
Unemployed - Tho.	1ST	1.23	1.10	1.40	12.12	-11.90
Rate - %	1ST	7.23	6.43	8.30		
Retail Sales - Mil. $	1ST	18.63	18.87	14.51	-1.31	28.38
H. Lyon County--Emporia Area - Quarterly						
Civilian Labor Force - Tho.	1ST	19.07	19.47	19.00	-2.05	0.35
Employed - Tho.	1ST	18.03	18.47	17.57	-2.35	2.66
Unemployed - Tho.	1ST	1.00	1.00	1.47	0.00	-31.82
Rate - %	1ST	5.43	5.17	7.60		
Retail Sales - Mil. $	1ST	22.32	23.49	17.03	-5.00	31.07
I. Saline County--Salina Area - Quarterly						
Civilian Labor Force - Tho.	1ST	26.53	25.80	25.27	2.84	5.01
Employed - Tho.	1ST	24.80	24.20	23.33	2.48	6.29
Unemployed - Tho.	1ST	1.73	1.60	1.90	8.33	-8.77
Rate - %	1ST	6.53	6.20	7.57		
Retail Sales - Mil. $	1ST	40.64	43.12	30.84	-5.74	31.77
J. Barton County--Great Bend Area - Quarterly						
Civilian Labor Force - Tho.	1ST	15.97	17.07	16.60	-6.45	-3.82
Employed - Tho.	1ST	14.47	15.43	15.27	-6.26	-5.24
Unemployed - Tho.	1ST	1.50	1.63	1.33	-8.16	12.50
Rate - %	1ST	9.37	9.53	8.00		
Retail Sales - Mil. $	1ST	23.49	24.23	24.74	-3.08	-5.07
K. Montgomery County--Coffeyville Area - Quarterly						
Civilian Labor Force - Tho.	1ST	17.73	17.23	16.67	2.90	6.40
Employed - Tho.	1ST	16.37	15.83	15.23	3.37	7.44
Unemployed - Tho.	1ST	1.37	1.33	1.47	2.50	-6.82
Rate - %	1ST	7.77	7.87	8.77		
Retail Sales - Mil. $	1ST	22.63	22.49	17.65	0.61	28.23

SOURCE: Ks. Dept. of Human Resources, Ks. Dept. of Revenue.

TABLE EIGHT: BANKING ACTIVITY IN KANSAS*

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Federal Reserve Member Banks						
Kansas - Quarterly, in Millions						
Total Deposits -	1ST	32940.7	31439.7	30462.0	4.77	8.14
Total Checkable -	1ST	5937.3	5704.0	5352.5	4.09	10.93
Demand Deposits -	1ST	3073.0	3112.7	2941.0	-1.27	4.49
Other Checkable -	1ST	2864.3	2591.3	2413.0	10.54	18.70
Small Time and Savings -	1ST	22423.7	21383.0	20948.5	4.87	7.04
Large Time -	1ST	4579.7	4352.7	4162.0	5.22	10.04
Kansas City, KS - Quarterly, in Millions						
Total Loans -	1ST	1565.23	568.43	1318.35	175.36	18.73
Real Estate -	1ST	734.63	213.33	561.35	244.36	30.87
Commercial and Industrial -	1ST	461.93	182.57	376.80	153.02	22.59
Consumer -	1ST	122.40	50.60	126.10	141.90	-2.93
Total Deposits -	1ST	1759.87	630.77	1312.00	179.00	34.14
Demand Deposits -	1ST	225.03	119.50	159.75	88.15	40.87
Time and Savings -	1ST	967.20	319.53	746.30	202.69	29.60
Topeka - Quarterly, in Millions						
Total Loans -	1ST	323.93	336.97	347.55	-3.87	-6.80
Real Estate -	1ST	97.07	93.10	91.20	4.26	6.43
Commercial and Industrial -	1ST	114.87	126.13	134.00	-8.93	-14.28
Consumer -	1ST	50.30	51.60	55.35	-2.52	-9.12
Total Deposits -	1ST	528.13	543.07	520.50	-2.75	1.47
Demand Deposits -	1ST	164.70	172.37	148.45	-4.45	10.95
Time and Savings -	1ST	232.50	240.50	247.20	-3.33	-5.95
Wichita - Quarterly, in Millions						
Total Loans -	1ST	1236.57	1232.57	1016.95	0.32	21.60
Real Estate -	1ST	204.00	206.17	165.90	-1.05	22.97
Commercial and Industrial -	1ST	523.87	519.33	461.75	0.87	13.45
Consumer -	1ST	350.57	341.03	241.05	2.80	45.43
Total Deposits -	1ST	1792.47	1823.50	1843.70	-1.70	-2.78
Demand Deposits -	1ST	445.37	470.27	451.30	-5.29	-1.31
Time and Savings -	1ST	884.17	870.17	854.90	1.61	3.42

SOURCE: Federal Reserve Bank of Kansas City.

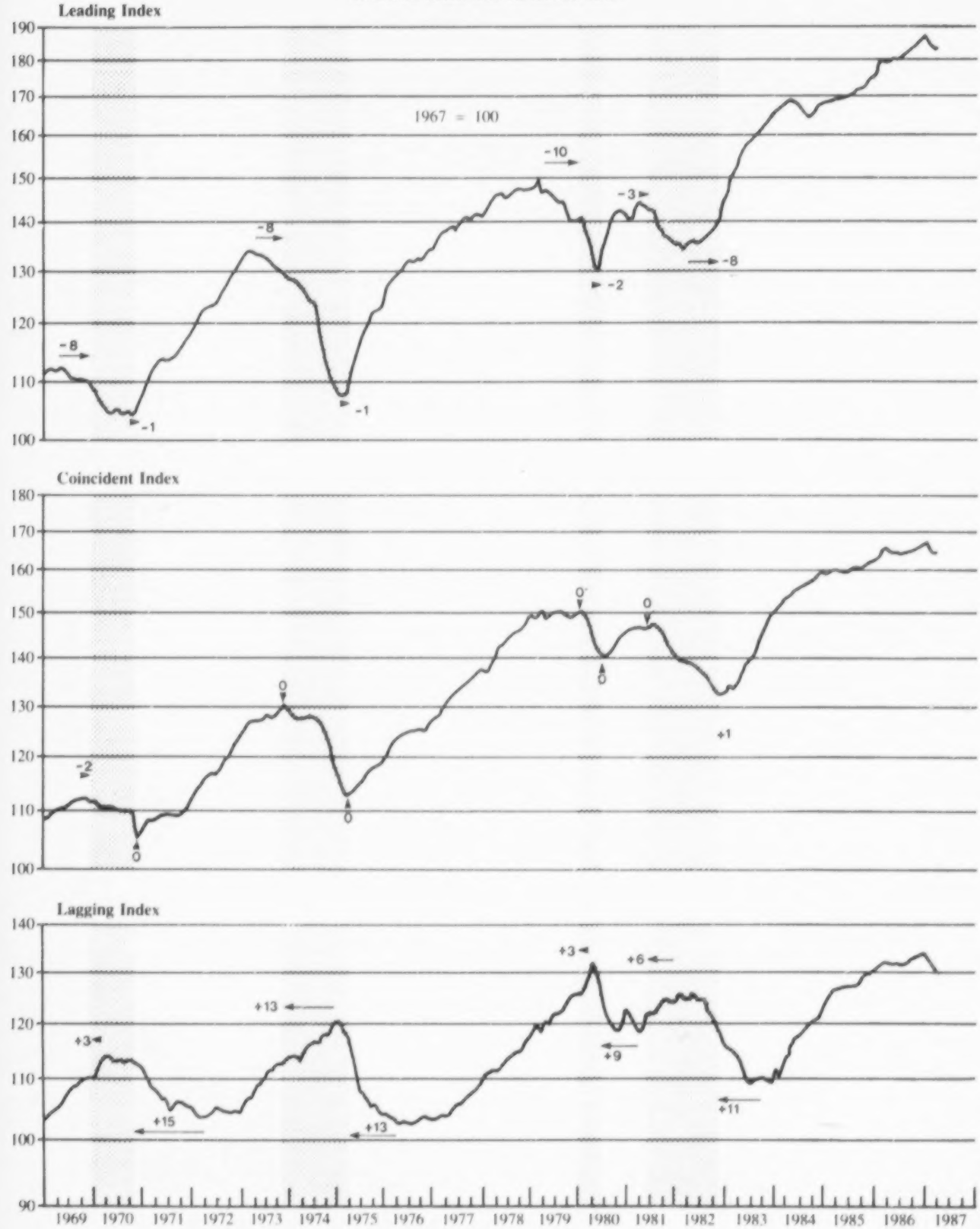
* Figures for all commercial banks are no longer provided by the Federal Reserve Bank of Kansas City. It should be noted, therefore, that the data above pertain only to Federal Reserve member banks of Kansas and do not represent all commercial banking in the state. Since 1980, these data have covered approximately 50 percent

TABLE NINE: SAVINGS AND LOAN ACTIVITY IN KANSAS

Area		Current Period	Previous Period	Year Ago	% Change From Previous Period	% Change From Year Ago
A. Kansas - Quarterly, in Millions						
Total Assets -	4th	16712.0	16300.0	14626.0	2.53	14.26
Mortgage Loans -	4th	13034.0	12873.8	12204.0	1.24	6.80
B. Kansas City, KS - Quarterly, in Millions						
Total Assets -	4th	1940.00	1965.60	1655.23	-1.30	17.20
Mortgage Loans -	4th	1484.40	1550.47	1476.57	-4.26	0.53
C. Topeka - Quarterly, in Millions						
Total Assets -	4th	2907.57	2924.93	2679.27	-0.59	8.52
Mortgage Loans -	4th	2387.23	2319.43	2273.50	2.92	5.00
D. Wichita - Quarterly, in Millions						
Total Assets -	4th	2254.33	2207.60	2263.30	2.12	-0.40
Mortgage Loans -	4th	1679.00	1660.97	1745.80	1.09	-3.83

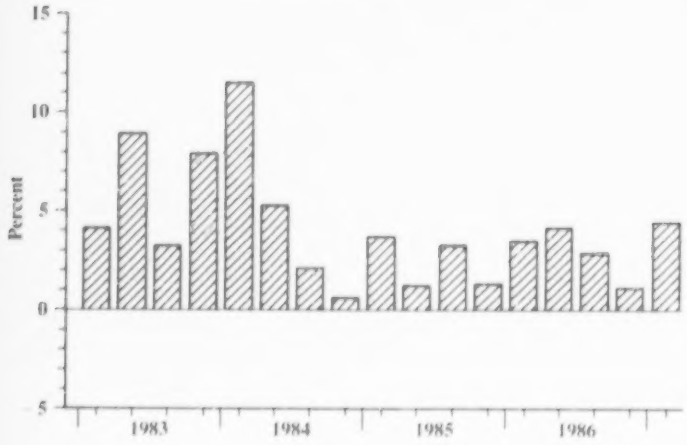
SOURCE: Federal Home Loan Bank of Topeka.

COMPOSITE INDEXES

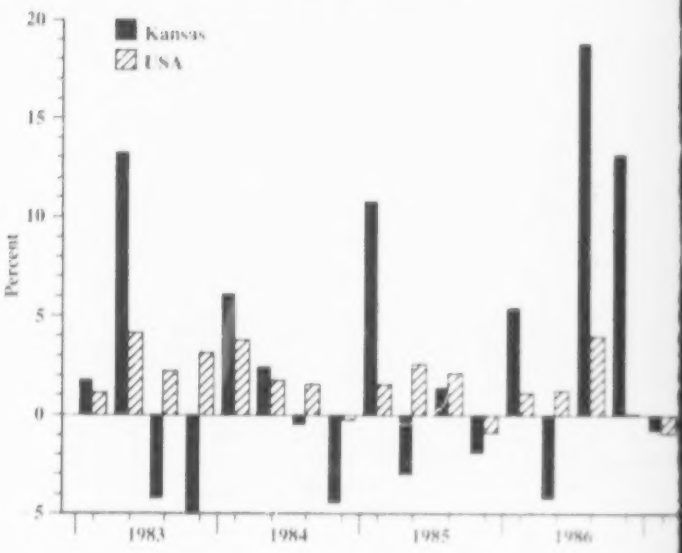


Note: Numbers entered on the chart indicate length of leads (–) and lags (+) in months from reference turning dates. Shading indicates periods of recession.

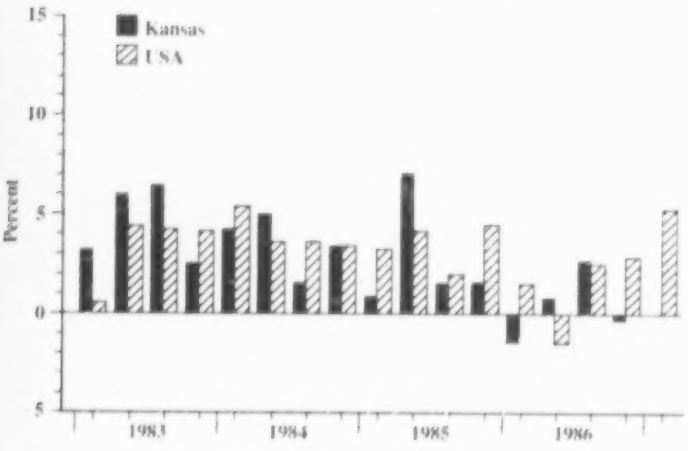
Average Annual Growth Rate of GNP
(1982 Dollars)



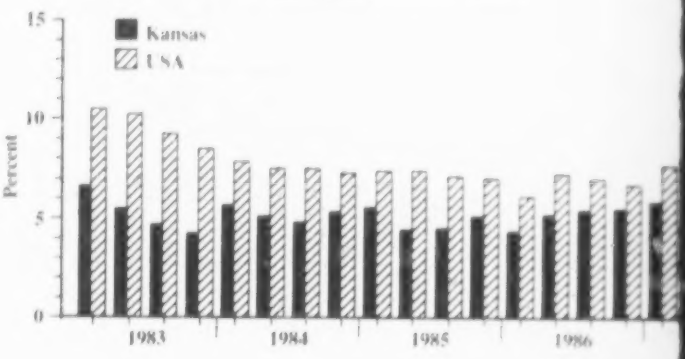
Growth of Retail Sales
(In Current Dollars)



Rate of Inflation
(CPI-U, Seasonally Adjusted)



Civilian Unemployment Rate



The University of Kansas
Kansas Business Review
Vol. 10, No. 4
Summer 1987

Published quarterly by The University of Kansas
The Institute for Public Policy and Business Research
Lawrence, Kansas 66045

Forwarding and address correction requested.